# REMOVAL PROGRAM AFTER ACTION REPORT FOR THE INTERVALE STREET SITE QUINCY, NORFOLK COUNTY, MASSACHUSETTS 11 October 2014 through 27 August 2015

# Prepared For:

U.S. Environmental Protection Agency Region I Emergency Planning and Response Branch 5 Post Office Square, Suite 100 Boston, Massachusetts 02109-3912

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# Submitted By:

Weston Solutions, Inc.
Superfund Technical Assessment and Response Team IV (START)
3 Riverside Drive
Andover, Massachusetts 01810

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#### 1.0 INTRODUCTION

The following report, entitled *Removal Program After Action Report for the Intervale Street Site, Quincy, Norfolk County, Massachusetts, 11 October 2014 through 27 August 2015,* is a chronological summary of the response actions taken by the U.S. Environmental Protection Agency (EPA), Region I, Emergency Planning and Response Branch (EPRB). The report details the situation as it developed, actions taken, and resources committed.

Site activities included: clearing debris from site; establishing a clean zone (CZ); contamination reduction zone (CRZ) and exclusion zone (EZ); mobilizing a command post trailer and storage container; mobilizing heavy equipment; establishing a 20-by-20-foot grid on the site for the collection of composite soil samples from each grid for polychlorinated biphenyls (PCBs), toxicity characteristic leaching procedure (TCLP), and total metals analyses; excavating the first foot of soil from all grids; excavating grids to greater depths where PCBs were greater than 10 milligrams per kilogram (mg/kg) below the first foot; treating and disposing of PCB and metals contaminated soil; collecting post-excavation samples; placing GeoTextile fabric and backfilling the excavated areas.

## 2.0 SITE CONDITIONS AND BACKGROUND

## 2.1 Site Location and Description

The Intervale Street site (the site) is located at 175/189 Intervale Street in Quincy, Norfolk County, Massachusetts (see Appendix A, Figure 1) [1]. The geographic coordinates of the site, as measured from its approximate center, are 42° 14′ 7″ north latitude and 71° 00′ 54″ west longitude. The site is bordered to the east, west, and south by commercial properties and to the north by residential and commercial properties (see Appendix A, Figure 2) [2]. The site is approximately 0.75 acres and prior to the EPA Removal Action, contained multiple soil stockpiles within a sandy/gravel lot. Previously, there was one unoccupied cinderblock/corrugated metal building, including an attached storage room and an attached cinderblock room with no apparent access. The building and attached rooms were structurally compromised. This structure was demolished in August 2013 by the City of Quincy (the City). Between June 1972 and November 2009, the Gregoire Family Trust owned the site, until the City acquired the property via foreclosure [3, 4].

## 2.2 Site History/Previous Actions

The site has been used as a metal scrapping yard since the 1940s, most recently by Henry P. Gregoire, who conducted metal scrapping, tire removal/recycling, and manhole cover recoating using a tar-related material [3].

In 1986, there was a fire involving a 55-gallon drum containing unspecified materials. Much of the drum's contents were released and dispersed during the initial attempt to control the fire. During an Environmental Site Assessment conducted by Consulting Engineers & Environmental Scientists, Inc. (CEES) on behalf of Mr. John Noonan, Esquire, four borings/groundwater monitoring wells were completed and sampled. Polychlorinated biphenyl (PCB) Aroclor-1260 was detected in the soil at a maximum concentration of 2.0 mg/kg. Total petroleum hydrocarbons (TPH) were detected at a maximum concentration of 23,000 mg/kg in one of the soil boring locations. Chlorinated compounds were detected in three of the four monitoring wells. Trichloroethylene (TCE) and tetrachloroethylene (PCE) were detected (maximum concentrations

of 28 parts per billion [ppb] and 38 ppb, respectively) in the groundwater monitoring well in the center of the property. Benzene, toluene, ethylbenzene, and xylene (BTEX) compounds and dichlorobenzene were detected in the well on the western edge of the property. Additional volatile organic compounds (VOCs) were also detected [3].

On 29 May 2012, Massachusetts Department of Environmental Protection (MassDEP) personnel conducted a site visit. While on site, they noted evidence of trespassing, indicating that the property did not appear to be secure. During the site visit, various types of hazardous materials were observed. Two rusting 55-gallon drums that appeared to contain liquids were observed on the western boundary of the property. Another 55-gallon drum with unknown contents was observed within the building, along with approximately 50 empty propane tanks. Other hazardous materials observed included two 275-gallon aboveground storage tanks (ASTs) lying on their sides outside of the building; containers of some type of sealer or tar; tires; and additional, scattered propane tanks. The two 275-gallon ASTs did not appear to have been properly decommissioned, and were suspected to contain liquid or sludge. There were a few piles of pallets and debris that possibly contained other hazardous materials. A pit was observed in the main section of the building, which may have been associated with a scale or related to an automobile lift with a hydraulic fluid reservoir [3].

On 5 July 2012, at the request of MassDEP, EPA and Weston Solutions, Inc. Superfund Technical Assessment and Response Team (START) members mobilized to the site to conduct drum and surface soil sampling activities. MassDEP representatives were also on site to discuss the site history, site access, and building contents. START members monitored the two drums with a photoionization detector (PID), and then conducted drum sampling. PID screening results indicated slightly elevated VOC readings in one of the 55-gallon drums, with a maximum of 0.3 units above background (uab). START conducted hazardous categorization (Hazcat) screening of the two samples. Hazcat screening indicated that the drums contained glycol- and petroleumbased fluids, suspected to be used automotive anti-freeze and automotive oil. Once the drum sampling was completed, START personnel entered the building to investigate the additional drums, which were found to contain small amounts of sludge and grease. Several gasoline cans were noted to be approximately one-tenth full of unknown liquids (no odor, and VOC readings of 0 uab). Other materials observed included a 5-gallon container of motor oil and a 5-gallon container of flammable wood stain (containing naphtha). A cinderblock room was observed on the north side of the building, with no apparent means of access [3].

START personnel then collected grab surface soil samples. Air monitoring was conducted at each sample location: there were no levels above background detected except at surface soil sample location SS-08, which had an elevated VOC reading of 1.9 uab. START collected a total of 11 surface soil samples (including one duplicate) from 10 locations. The 11 surface soil samples were submitted to EPA's Office of Environmental Measurement and Evaluation (OEME) for metals and PCB analyses [3].

Analytical results indicated the presence of two PCB aroclors above laboratory reporting limits, which included the following (maximum concentration in parentheses): Aroclor-1254 (6.0 mg/kg); and Aroclor-1260 (4.9 mg/kg). The two PCB aroclors were detected in the surface soil samples above their respective Massachusetts Contingency Plan (MCP) Soil Category 1 (S-1) standards, including the following (S-1 standard in parentheses): Aroclor-1254 (2 mg/kg) and Aroclor-1260 (2 mg/kg) [3].

Seven metals were detected in the surface soil samples above their respective MCP Soil

Category 1 standards, including the following (S-1 standard in parentheses): arsenic (20 mg/kg); barium (1,000 mg/kg); cadmium (2 mg/kg); chromium (30 mg/kg); lead (300 mg/kg); nickel (20 mg/kg); and zinc (2,500 mg/kg) [3].

In April 2013, MassDEP installed three replacement monitoring wells and collected groundwater samples. The City, as the current owner of the property, oversaw the transportation and disposal of abandoned drums, and removed solid waste that had been inhibiting a full characterization of surface soils. Based on the documented site conditions summarized in the Site Investigation Closure Memorandum dated 15 August 2012, a Time Critical Removal Action was recommended to address this release of hazardous substances. In August and September 2013, the City, using leveraged funding from MassDevelopment, conducted asbestos abatement and demolished the buildings to enable a more comprehensive extent of contamination survey. Between September 2013 and May 2014, the City conducted a Phase I, Phase II and a pilot test of soil stabilization for a Phase III assessment. Sampling completed by the City's technical consultant (Woodard & Curran) in the fall of 2013 found arsenic levels as high as 74.1 mg/kg, chromium as high as 560 mg/kg, lead as high as 13,100 mg/kg and PCBs as high as 2,300 mg/kg [4].

## 3.0 SUMMARY OF FEDERAL RESPONSE ACTIONS

## 3.1 Organization of the Response

ORGANIZATION OF THE RESPONSE			
Organization	Representatives	Responsibilities	
U.S. Environmental Protection Agency (EPA) Emergency Planning and Response Branch (EPRB) 5 Post Office Square, Suite 100 Boston, Massachusetts 02109-3912 (617) 918-1284	Athanasios Hatzopoulos	EPA On-Scene Coordinator (OSC) responsible for the initiation, oversight, and completion of all removal activities. The OSC coordinated with State and local officials.	
Weston Solutions, Inc. (Weston) Superfund Technical Assessment and Response Team (START) 3 Riverside Drive Andover, Massachusetts 01810 (978) 552-2115	Sara Evarts	START Site Leader that provided the OSC with technical assistance, site documentation, site health and safety monitoring, air monitoring, and draft and final report preparation.	
Guardian Environmental Services (GES) 70 Albe Drive Newark, Deleware 19702 (877) 437-0007	James Jacoby, Andrew Likos, Jay Robertson, Frank Rodriguez	Response Managers (RM) for the ERRS contractor that performed removal activities. The RM was responsible for oversight and organization of mobilization, demobilization, and waste removal activities.	
Massachusetts Department of Environmental Protection (MassDEP) 205B Lowell Street Wilmington, MA 01887 (978) 694-3348	Valerie Thompson	State representative that provided support for removal activities.	

## 3.2 Mobilization and Site Preparation

The site-specific removal Health and Safety Plan (HASP) was reviewed and signed by all personnel before any work commenced. In addition, emergency telephone numbers and directions to the hospital were posted and work zones were delineated. All activities were performed in appropriate personal protective equipment (PPE) in accordance with the HASP. The HASP was prepared by START personnel as a separate document, entitled *Health and Safety Plan for the Intervale Street Site, Quincy, Norfolk County, Massachusetts* [5]. On 13 October, the mobilization and staging of Emergency Rapid Response Services (ERRS) equipment was initiated.

## 3.3 Chronology of Removal Activities

## **Week of 26 July 2014**

On 28 July 2014, an Action Memorandum to conduct the Removal Action was signed by James T. Owens III, Director of the Office of Site Remediation and Restoration (OSRR).

## Week of 27 September 2014

A site walk was conducted with the following personnel:

- OSC Athanasios Hatzopoulos, EPA EPRB
- Sara Evarts, Weston START
- James Jacoby, GES
- Robert Stevens, City of Quincy Department of Planning & Community Development

## Week of 11 October 2014

A 20-by-20-foot grid was established on site with the following personnel in attendance:

- OSC Athanasios Hatzopoulos, EPA EPRB
- Sara Evarts, Weston START
- Gerald Hornok, Weston START
- Valerie Thompson, MassDEP
- Ken Sanderson, MassDEP

A Trimble<sup>TM</sup> Geoexplorer® [6] was used to located previous sample locations from the Woodard & Curran Licensed Site Professionals (LSPs) hired by the City of Quincy. Per the OSC, the site grids were established using the LSP sample locations as the center point of the grid.

#### Week of 17 October 2014

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby

Equipment on Site		
Type	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	
Portable Toilet	2	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

Equipment on site remained the same each week unless otherwise stated.

#### Activities for the week included:

- Mobilizing and setting up site utilities (trailer, generator, etc.).
- Establishing the site grid for sample collection and soil excavation.

#### Key Dates:

On 14 October 2014, START and ERRS were on site to monitor the set-up of site utilities (trailer, generator).

On 15 October 2014, electricians from TPF Electrical Services, Inc. were on site to wire the site trailers with electricity.

On 16 October 2014, EPA OSC and START held a meeting with Massachusetts Department of Environmental Protection (MassDEP) and Woodard & Curran (City Of Quincy Environmental consultant) to discuss site plans and previous sampling activities.

On 17 October 2014, GES delivered the front loader to site.

For the duration of the removal action, START photodocumented site activities (see Appendix B – Photodocumentation Log). In addition, START used a MultiRAE Pro PID [7] and TSI DustTracks<sup>TM</sup> for air monitoring, as needed. Soil samples were collected to characterize disposal of contaminated soil. Confirmation and post-excavation samples were also collected at the request of the OSC. Samples were sent to EPA New England Regional Laboratories/Office of Environmental Management and Evaluation (NERL/OEME) for PCB and Metal analysis, Spectrum Analytical, Inc. (North Kingstown, RI) for soxhlet extraction and PCB analysis, and ESS Laboratory (Cranston, RI) for disposal characterization. X-Ray Fluorescence (XRF) Spectrometry was also performed on site for disposal characterization and preliminary metals analysis.

## Week of 24 October 2014

Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby

Equipment on Site		
Type	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	
Portable Toilet	2	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

Activities for the week included:

• Collecting five-point composite soil samples.

# Key Dates:

On 21 and 22 October 2014, START collected five-point composite soil samples [8] from site grids at the 0-1 foot below ground surface (bgs) interval. Samples were collected in accordance with the document entitled *Sampling and Analysis Plan for the Intervale Street Site, Quincy, Norfolk County, Massachusetts*, dated October 2014 [9].

# Week of 31 October 2014

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts Eric Ackerman
Response Manager – GES	James Jacoby

Equipment on Site		
Type	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	
Portable Toilet	2	

Equipment on Site		
Type	Quantity	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

- Collecting composite soil samples from site grids at the 1 foot bgs interval.
- Collecting soil samples from the elevated soil area beneath the former building at the 2-0 foot interval (approximately 2 feet above grade).
- Excavating test pits at four grids.
- Preparing samples for delivery to NERL/OEME for PCB analysis [10, 13].

## Key dates:

During the week, START continued composite soil sampling. Grids G 100-120, G 80-100, G 40-60, G 60-80, F 15-40, F 40-60, F 60-80, F 80-100 and F 100-120 were collected at the 2-0 foot interval in addition to the 0-1 foot interval.

On 29 October 2014, during composite soil sampling, elevated VOC readings of greater than (>) 50,000 parts per billion (ppb) were read at ground level at Grid F 120-140.

On 30 October 2014, MassDEP representative Thompson was on site. Test pitting was conducted at the following grids: G 240-260, H 180-200, F 140-160 and I 120-140. A safe and other metal scrap was found in G 240-260. START collected a sample from two visibly different types of soil from the test pit. Grid H 180-200 contained large amounts of saturated wood material; Grid F 140-160 contained wood material, stone, and groundwater at approximately 5 feet bgs; and Grid I 120-140 contained mostly asphalt and stone.

On 31 October 2014, during composite soil sampling, elevated VOC readings of 25,000 ppb were read at ground level at Grid D 120-140.

#### Week of 7 November 2014

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby

Equipment on Site		
Туре	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	

Equipment on Site		
Туре	Quantity	
Portable Toilet	2	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

- Collecting composite samples from site grids.
- Performing XRF analysis on soil samples [11].
- Preparing samples for delivery to NERL/OEME for PCB analysis [14].

## Key dates:

On 3 November 2014, START continued grid composite sampling. Grids E 15-40, E 40-60, E 60-80 and E 80-100 were collected at the 2-0 foot interval. Elevated VOC readings of 2,790 ppb were read at ground level of Grid E 140-160.

On 4 November 2014, START completed grid composite sampling.

From 5 through 7 November 2014, START conducted XRF screening of grid composite samples and monitored the process with a dosimeter and Ludlum 19A. See Table 1 for final XRF Screening sample results.

## Week of 14 November 2014

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby

Equipment on Site	
Type	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

- Performing XRF analysis on samples.
- Submitting soil for disposal characterization purposes.

## Key dates:

On 11 November 2014, two high, medium, and low lead grids, as determined via XRF analysis, were identified, as well as a grid that indicated high chromium content. ERRS used these samples to prepare the TCLP samples. ERRS created the chain of custody and signed the samples over to ESS Laboratory, who was on site to transport TCLP soil samples for disposal analysis. ESS was the laboratory chosen to do disposal analysis by ERRS.

On 13 November 2014, START received the first two sets of PCB results from NERL. This data, along with the previous sampling data and subsequent NERL data, would be used to identify grids greater than or equal to (≥) or less than (<) 50 mg/kg PCB and to create a soil excavation plan.

## Week of 21 November 2014

Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby

<b>Equipment on Site</b>		
Туре	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	
Portable Toilet	2	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

Activities for the week included:

• Using PCB results to plan excavation and wastestream activities for the site. Initiated excavation of grids to 1 foot bgs and placed in either the PCBs ≥50 mg/kg or PCBs <50 mg/kg waste pile.

Key dates:

On 18 November 2014, per OSC Hatzopoulos, ERRS requested that ESS Laboratory perform Resource Conservation and Recovery Act (RCRA) 8 metals analysis on the samples previously sent to ESS for TCLP analysis.

On 20 November 2014, START received the preliminary RCRA 8 metals results from ERRS.

On 21 November 2014, START received the third set of PCB results from NERL. This data, along with the previous sampling data, was used to identify  $\geq$  or <50 mg/kg PCB grids and to create an excavation plan.

## Week of 28 November 2014

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES)

Equipment on Site	
Type	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Demolishing a concrete wall located on the south end of the site.
- Meeting with MassDEP and Woodard & Curran representatives to discuss site progress.
- Initiating daily particulate air monitoring using three Dust Traks. Dust Trak usage was initiated to monitor any particulate migration from the Removal Action activities.

## Key dates:

On 24 November 2014, ERRS began demolishing the concrete wall located at the southwest end of the site. Jarrod Yoder and George Franklin of Woodard & Curran and Valerie Thompson of MassDEP was on site to discuss progress.

On 25 November 2014, scrap drums were found underneath the wall area. The drums appeared to be empty and excavation continued.

On 26 November 2014, personnel departed for the Thanksgiving holiday break.

## Week of 5 December 2014

Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Jay Robertson, Operator (GES) Jeffrey Correia, Laborer (TMC
	Environmental)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Consolidating and staging debris.
- Excavating grids at the 0-1 foot interval.
- Collecting composite samples from site grids.
- Meeting with MassDEP to discuss site progress.
- Conducting 3 days of personal air sampling.
- Conducting daily particulate air monitoring using three Dust Traks.

Current NERL/OEME data as well as previous Woodard & Curran data was used to determine which grids were to be excavated as  $\geq$  or <50 mg/kg of PCB. The elevated 'mound' area (approximately 2-3 feet above grade where the former building structure was located) was excavated as PCBs <50 mg/kg. Personnel first began excavation of all the grids with PCBs  $\geq$ 50 mg/kg.

## Key dates:

On 1 December 2014, debris from the concrete wall, as well as wood and other debris from site, was moved to the northeast end of the site to clear the excavation area by ERRS.

On 2 December 2014, Valerie Thompson was on site for an update on site progress.

On 3 December 2014, 3-day personal air sampling was started.

On 4 December 2014, a slight odor was noticeable from the PCBs ≥50 mg/kg soil pile. A PID reading of 700 ppb VOCs was noted at the breathing level next to the pile; the VOC level was dissipating.

## Week of 12 December 2014

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Jay Robertson, Operator (GES) Jeffrey Correia, Laborer (TMC)

<b>Equipment on Site</b>	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Continuing the excavation of grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Preparing samples for delivery to NERL/OEME for PCB analysis [15].
- Conducting daily particulate air monitoring using three Dust Traks.

# Key dates:

On 8 December 2014, ERRS began excavation of grids with PCBs <50 mg/kg.

On 9 December 2014, site activities were halted due to heavy rains.

## Week of 19 December 2014

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Jay Robertson, Operator (GES) Jeffrey Correia, Laborer (TMC)

<b>Equipment on Site</b>	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Continuing the excavation of grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Receiving results from the 3-day personal air sampling from ConTest Analytical Laboratory in East Longmeadow, MA [16].
- ESS Laboratory was on site to obtain disposal samples from the PCBs ≥50 mg/kg pile and the PCBs <50 mg/kg pile.
- Conducting daily particulate air monitoring using three Dust Traks.

Three personal samples each for the laborer and operator were submitted. All samples were non-detect for arsenic and chromium. Lead was less than the reporting limit of 1.2 for total micrograms ( $\mu g$ ) and non-detect for micrograms per cubic meter ( $\mu g/m^3$ ). The action levels in the Health and Safety Plan for Level C PPE are greater than 0.005 mg/m³ for arsenic and 0.025 mg/m³ for lead. Therefore, PPE was reduced to Level D with continuing air monitoring with DustTraks.

## Key dates:

ERRS collected disposal samples from the greater than and less than 50 mg/kg PCB piles. ERRS provided an ESS representative with the composite sample material, who prepared the samples. RM Jacoby signed custody of the samples over to ESS. Samples were analyzed for Total Metals, Pesticide TCLP Compounds, TCLP Metals, TCLP Herbicide Compounds, Volatile TCLP Compounds, Semivolatile TCLP Compounds, PCBs, Corrosivity, Flashpoint, Reactive Cyanide and Reactive Sulfide. Consolidation of the PCBs <50 mg/kg soil was completed and Grids G 0-40 and G 40-60 were excavated to grade.

Personnel departed site for the holiday break.

## Week of 26 December 2014

No site activities due to holiday break.

Disposal analysis for the two soil stockpiles were received from ESS Laboratory. The PCBs ≥50 mg/kg pile had the following results: 13.76 ppm total PCBs; 1,240 ppm lead; and non-detect TCLP for lead. The PCBs <50 mg/kg pile had the following results: 14.3 ppm total PCBs; 604 ppm lead; and 6.13 mg/L TCLP for lead.

## Week of 2 January 2015

No site activities due to holiday break.

# Week of 9 January 2015

Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	Andrew Likos
ERRS – Operators/Laborers	James Jacoby, Operator (GES) Russ Chevalier, Operator (GES)

Equipment on Site	
Type	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

A mini-excavator was also on site.

Activities for the week included:

- Excavating grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Consolidating wastestreams.
- Receiving disposal analysis for the soil stockpiles.
- Collecting composite samples from site grids at the 1-2 foot below grade interval.
- Preparing samples for PCB analysis for delivery to NERL/OEME [17].
- Terminating site work due to extreme cold.

• Conducting daily particulate air monitoring using three Dust Traks.

Analytical results indicated that the wastestreams with PCBs <50 mg/kg failed TCLP for lead. Thus, for disposal purposes, the soils had to be treated to reduce the leachable lead.

## Key dates:

On 5 January 2015, based on 3-day personal air sampling results, PPE was downgraded to Level D in accordance with the HASP.

On 6 January 2015, ERRS assisted START with sample collection using the mini-excavator. Grids contained a large amount of debris (granite, wood, metal, rock, etc.).

On 7 January 2015, a technician was on site to repair the generator. Per OSC Hatzopoulos, site work was shut down due to extreme cold.

# Week of 16 January 2015

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Jeffrey Correia, Laborer (TMC) Nick Cicchetti, Laborer (TMC)

<b>Equipment on Site</b>	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Meeting with MassDEP and City of Quincy personnel to discuss site activities and plans.
- Returning to site to repair and secure covers on soil stockpiles.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

On 13 January 2015, OSC Hatzopoulos and START member Evarts attended a meeting at Quincy City Hall to discuss site activities with representatives from EPA, MassDEP, and the City of Quincy.

On 15 January 2015, START and ERRS returned to site to apply additional tarp covers to the two PCB-contaminated soil stockpiles.

## Week of 23 January 2015

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	Andrew Likos
ERRS – Operators/Laborers	James Jacoby, Operator (GES) Russ Chevalier, Operator (GES)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Collecting composite soil samples from site grids at the 1-2 foot bgs interval.
- Preparing samples for PCB analysis at NERL/OEME [18]. See Figure 4 for 1-2 foot PCB screening results for soils in grids that were not excavated further.
- Conducting daily particulate air monitoring using three Dust Traks.
- Terminating site work due to snow accumulation.

## Key dates:

On 22 January 2015, OSC Hatzopoulos determined that site work was to shut down due to weather conditions. OSC Hatzopoulos would determine when site activities would resume.

## **Week of 10 April 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES)

<b>Equipment on Site</b>	
Type	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Repairing winter-related damages to fence and other items.
- Continuing excavation of grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

On 7 April 2015, START and ERRS returned to site. ERRs repaired the site fence, which had been damaged during the winter from plowing activities near the site.

On 8 April 2015, personnel from US Ecology (EQ Northeast, Inc.) were on site to discuss plans for soil load out. US Ecology was awarded the contract for the disposal of soils with PCBs  $\geq$ 50 mg/kg.

## Week of 17 April 2015

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES)
	Francisco Bautista, Laborer (GES)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

- Initiating load-out of PCBs ≥50 mg/kg soil.
- Collecting composite samples from site grids at the 1-2 foot below grade interval.
- Excavating grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Preparing samples for PCB analysis at NERL/OEME [19].
- Conducting daily particulate air monitoring using three Dust Traks.

Thirteen loads of approximately 35 tons/load were transported from site for disposal at the US Ecology Wayne Disposal Inc., landfill located in Belleville, Michigan. See Appendix D, Waste Disposal Summary Table for all waste manifests. A police detail was hired to assist with traffic during the load-out process of all of the soil.

## Key dates:

On 13 April 2015, Robert Stevens of the Quincy Department of Planning and Community Development and Jack Sullivan of the Quincy Police Department were on site to observe load out procedures. It was determined that a police detail would be needed during load out procedures to stop traffic on Centre Street if needed.

On 15 April 2015, START placed all samples from the 0-1 foot interval grids that correlate with Toxic Substances Control Act (TSCA) soil into the pile for disposal. Periodically, START would dispose of extraneous sample media into appropriate TSCA or Non-TSCA stockpiles for disposal.

On 16 April 2015, ERRS collected six disposal samples, one for every 200 tons, from the first 1,200 tons (approximately) of excavated PCBs <50 mg/kg soil. ESS Laboratory was on site to pick up the samples. Samples were analyzed for TCLP Metals. Waste Management required the additional samples for disposal. Waste Management was chosen by ERRS as the disposal facility for the soil PCBs <50, which was also metal contaminated and needed to be treated.

#### Week of 24 April 2015

#### Personnel on site:

OSC – EPA	Wing Chau
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

<b>Equipment on Site</b>	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Preparing soil stockpiles with PCBs <50 mg/kg for stabilization by creating depressions in the middle of each pile.
- Preparing the fire hydrant for use during the soil stabilization process and for dust suppression.
- Treating the PCBs <50 mg/kg soil pile for leachable lead.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

On 22 April 2015, ERRS created depressions in the PCBs <50 mg/kg soil stockpiles for stabilization. ERRS also set up the fire hydrant for use during soil stabilization and for dust suppression. MassDEP Representative Thompson was on site for an update.

On 23 and 24 April 2015, soil stabilization for leachable lead began. Personnel from United Retek were on site. United Retek was the company chosen by ERRS to stabilize the lead contamination. A cement truck was on site to pump dry cement into the depressions in the soil stockpiles. The soil was mixed with cement and water with the excavator to stabilize the lead. United Retek treated the soil, broken into two piles called A and B, and collected post-stabilization samples from both piles.

## **Week of 1 May 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Staging Soil Pile A in the load-out area to prepare for soil load-out activities.
- Collecting disposal samples from the soil pile with PCBs <50 mg/kg, excavated after previous disposal samples were collected. ESS Laboratory was on site to pick up the samples.
- Consolidating and moving soil stockpiles to make room for additional excavation.
- Conducting daily particulate air monitoring using three Dust Traks.

#### Key dates:

On 29 April 2015, ERRS collected disposal samples from an additional soil pile behind Soil Piles A and B.

On 30 April 2015, after Soil Pile A was moved to the load-out area, the soil behind it was moved toward the gate. ESS was on site to pick up the samples from 29 April. Samples were analyzed for Total Metals, VOCs, organochlorine pesticides, PCBs, chlorinated herbicides, semivolatile organic compounds (SVOCs), corrosivity, flashpoint, and reactivity.

Disposal analysis for the first soil pile was received from ESS Laboratory. Results confirmed that the soil was to be treated for leachable lead, with one sample result of 15.7 milligrams per liter (mg/L). The RCRA TCLP standard is 5 mg/L.

## **Week of 8 May 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Preparing additional PCBs <50 mg/kg soil for stabilization by creating three depressions in the pile, split into Soil Piles C, D, and E.
- Initiating the load-out of the PCB <50 mg/kg soil from Soil Piles A and B. Twenty loads of approximately 32 tons each were removed from site and disposed of at Waste Management's Turnkey Landfill in Rochester, New Hampshire.
- Conducting daily particulate air monitoring using three Dust Traks.

#### Key dates:

On 6 May 2015, post-stabilization analysis from Soil Piles A and B were received from United Retek. The highest TCLP result for leachable lead was 1.01 mg/L (Soil Pile A) and 0.940 mg/L (Soil Pile B), confirming that stockpiles A and B were suitable for landfill.

## **Week of 15 May 2015**

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Type	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

- Continuing to prepare the additional PCBs <50 mg/kg soil for stabilization by creating three depressions in the pile, split into Soil Piles C, D, and E.
- Continuing excavation of PCBs <50 mg/kg grids at the 0-1 foot interval.
- Treating the PCBs <50 mg/kg Soil Piles C, D, and E for leachable lead.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

On 11 and 12 May 2015, disposal analysis for Soil Piles C, D and E was received from ESS Laboratory. Results confirmed that the soil was to be treated for leachable lead, with one sample result of 5.67 mg/L and another of 4.75 mg/L.

On 14 May 2015, United Retek was on site to treat the PCBs <50 mg/kg Soil Piles C, D and E. Fifteen 1-ton bags were delivered to site, and 5 tons were added to each pile. Cement was loaded into all piles, and ERRS began the dry mixing process.

On 15 May 2015, ERRS added water and wet mixed Soil Piles C, D, and E. United Retek was on site to collect post-stabilization samples of all three piles.

## **Week of 22 May 2015**

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

- Mixing of Soil Piles C, D, and E with water.
- Moving Soil Pile C to the load-out area.
- Collecting composite samples from site grids at the 1-2 foot bgs interval.
- Preparing samples for PCB analysis at NERL/OEME [20].
- Conducting daily particulate air monitoring using three Dust Traks.

# Key dates:

On 18 and 19 May 2015, ERRS continued mixing Soil Piles C, D and E. Soil Pile C was moved to the load-out staging area.

# Week of 29 May 2015

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

<b>Equipment on Site</b>	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1

Equipment on Site	
Туре	Quantity
Water Cooler	1

- Initiating the load-out of PCBs <50 mg/kg Soil Piles C and D.
- Excavating grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key Dates:

During the week, 14 loads of approximately 32 tons each were removed from site and disposed of at Waste Management's Turnkey Landfill in Rochester, New Hampshire.

## Week of 5 June 2015

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	Jay Robertson
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Type	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Loading out PCBs <50 mg/kg Soil Piles D and E.
- Excavating grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Performing X-Ray Fluorescence (XRF) Spectrometry on soil samples.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

During the week, nine loads of approximately 32 tons each were removed from site and disposed of at Waste Management's Turnkey Landfill in Rochester, New Hampshire.

On 1 and 2 June 2015, ERRS continued excavation, with some areas in the H, I and J grids excavated deeper due to an asphalt layer at the 1 foot interval, which was removed in order to sample.

## Week of 12 June 2015

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

<b>Equipment on Site</b>	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Excavating grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Collecting composite soil samples from site grids at the 1-2 foot bgs interval.
- Performing XRF Spectrometry on samples.
- Excavating test pits to determine the depth of the water table.
- Providing disposal samples from the PCBs <50 mg/kg pile to ESS Laboratory.
- Preparing samples for PCB analysis for delivery to EPA NERL/OEME [21].
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

On 11 June 2015, ERRS excavated test pits at H 120-140, F 120-140, and the EF 40 corner for a meeting with the city and state. The crew excavated until they hit groundwater.

George Franklin (Woodard and Curran), Jarrod Yoder (Woodard and Curran), Joanne Fagan (MassDEP), Valerie Thompson (MassDEP), Robert Stevens (City of Quincy), and Paul Hines (City of Quincy) were on site for a status update and site plan discussion.

ESS was on site and collected three disposal samples from the excavation pile. Samples were analyzed for Total Metals, VOCs (Low Level), organochlorine pesticides, chlorinated herbicides, SVOCs, PCBs, Corrosivity, Flashpoint, and Reactivity.

## **Week of 19 June 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site		
Type	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	
Portable Toilet	2	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

#### Activities for the week included:

- Completing the excavation of grids with PCBs <50 mg/kg at the 0-1 foot interval.
- Initiating the excavation of grids with PCBs between 10 and 50 mg/kg and PCBs > 50 mg/kg to the water table.
- Excavating the contents of a truck scale discovered below the 0-1 foot interval.
- Collecting composite soil samples from site grids at the 1-2 bgs interval and from the truck scale contents and surrounding area.
- Performing XRF Spectrometry on samples.
- Preparing samples for PCB analysis at EPA NERL/OEME [22].
- Conducting daily particulate air monitoring using three Dust Traks.

#### Key dates:

On 16 June 2015, ERRS discovered a soil-covered truck scale at the H 15-40 area.

On 17 June 2015, ERRS excavated the interior of the truck scale, removing wood and metal debris and moving the soil from inside the scale to an adjacent pile. The concrete base was left intact. A four-point composite sample was collected from the excavated truck scale material.

#### **Week of 26 June 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Type	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Excavating grids with PCBs between 10 and 50 mg/kg and PCBs > 50 mg/kg to the water table
- Collecting composite soil samples from grid walls along the perimeter of the site at the 0-1 bgs interval. All grid wall samples are denoted with a 'W'. A 'W2' designation indicated that a second sample was collected following additional work in an area. See Table 2 for results.
- Preparing soil stockpiles with PCBs <50 mg/kg for stabilization by splitting into five stockpiles and creating depressions in the middle of each pile.
- Preparing samples for PCB analysis at EPA NERL/OEME [23].
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

On 23 June 2015, United Retek was on site to discuss soil stabilization. ERRS prepared soil stockpiles for stabilization.

On 25 June 2015, ERRS treated soil stockpiles F, G, H, I and J with cement and water.

On 26 June 2015, United Retek collected post-stabilization samples from soil stockpiles F through J.

## Week of 3 July 2015

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Mixing soil stockpiles treated with cement and water.
- Meeting with MassDEP personnel to discuss site plans, including confirmatory sampling.
- Excavating grids with PCBs between 10 and 50 mg/kg and PCBs > 50 mg/kg down to the water table.
- Conducting a site walk with tree service personnel to discuss site tree removal.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

On 29 June 2015, MassDEP Representative Thompson was on site to discuss the sampling plan with START member Evarts and OSC Hatzopoulos and to determine which grids would be excavated to groundwater.

On 30 June 2015, Bogan Tree and Bunner Property were on site for a site walk with the ERRS RM regarding tree removal. ERRS discovered a manhole or storm drain at Grid FG 130 and excavated around it.

On 1 July 2015, Hansen Tree was on site for a site walk with the ERRS RM regarding tree removal

## **Week of 10 July 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

A hoe ram attachment for the excavator was also on site.

## Activities for the week included:

- Reducing concrete wall pieces into rubble with a hoe ram.
- Excavating grids with PCBs between 10 and 50 mg/kg and PCBs > 50 mg/kg to the water table.
- Collecting additional composite samples for Contract Laboratory Program (CLP) analysis [24]. See Figure 5 and Table 3 for CLP results.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

On 9 July 2015, START and OSC Hatzopoulos discussed which samples would be selected for CLP analysis. START collected additional samples from Grids G 180-200, F 100-120, and G 60-80 at the 1-2 foot interval.

## **Week of 17 July 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	James Jacoby
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site		
Type	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	
Portable Toilet	2	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

#### Activities for the week included:

- Delivering CLP samples to Spectrum Analytical, Inc. DBA MITKEM Laboratories.
- Power washing scrap metal.
- Loading out of PCBs <50 mg/kg soil, staged in Stockpiles F through J.
- Performing XRF Spectrometry on samples.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

During the week, 30 loads of approximately 32 tons each were removed from site and disposed of at Waste Management's Turnkey Landfill in Rochester, New Hampshire.

On 13 July 2015, START delivered CLP samples to Spectrum Analytical, Inc. DBA: MITKEM Laboratories for Soxhlet analysis.

On 15 July 2015, ESS was on site to collect disposal samples from the remaining non-TSCA soil pile. Samples were analyzed for TCLP Metals and PCBs.

On 17 July 2015, Frank Rodriguez arrived from GES to assume RM responsibilities for Jim Jacoby.

## **Week of 24 July 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	Frank Rodriguez
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site		
Type	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	
Portable Toilet	2	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

#### Activities for the week included:

- Continuing the load-out of PCBs <50 mg/kg soil from Stockpiles F through J.
- Initiating the excavation of PCBs ≥50 mg/kg grids to the water table.
- Placing concrete rubble pieces in excavated areas.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

During the week, two loads of approximately 32 tons each were removed from site and disposed of at Waste Management's Turnkey Landfill in Rochester, New Hampshire.

On 22 July 2015, Grids E and F 15-60 were excavated to groundwater, but excavation was stopped after groundwater was not observed after excavating approximately 6-7 feet. The OSC and personnel examined the area and noted that there was a large, natural clay layer likely hindering groundwater flow. The OSC instructed ERRS to not excavate any deeper than this layer.

On 23 July 2015, ERRS placed concrete pieces into the D and E 100-190 excavated area. ERRS also excavated G and H 300-310 and stopped at approximately 5 feet due to the presence of concrete foundation and lack of groundwater.

## **Week of 31 July 2015**

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Eric Ackerman, Paul Callahan
Response Manager – GES	Frank Rodriguez
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site	
Туре	Quantity
Front End Loader	1
Excavator	1
Office Trailer	1
Portable Toilet	2
Utility Trailer	1
Generator	1
Water Cooler	1

#### Activities for the week included:

- Continuing the load-out of PCBs ≥50 mg/kg soil.
- Excavating PCBs <50 mg/kg grids down to the water table.
- Conducting daily particulate air monitoring using three Dust Traks.

## Key dates:

During the week, 30 loads of approximately 32 tons each were removed from site and disposed of at Wayne Disposal Inc., landfill located in Belleville, Michigan.

On 25 July 2015, RM Rodriguez and personnel from Bogan Tree were on site cutting down trees at the western end of site.

On 27 July 2015, tree stumps left over from tree removal were put in the TSCA soil pile.

On 30 July 2015, ERRS excavated partial H 180-220 to groundwater, the northwestern half only, due to presence of material that did not look visibly contaminated.

## Week of 7 August 2015

#### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts
Response Manager – GES	Frank Rodriguez
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site		
Type	Quantity	
Front End Loader	1	
Excavator	1	
Office Trailer	1	
Portable Toilet	2	
Utility Trailer	1	
Generator	1	
Water Cooler	1	

#### Activities for the week included:

- Excavating PCBs <50 mg/kg grids.
- Conducting daily particulate air monitoring using three Dust Traks.
- United Retek was on site assisting with treatment of the PCBs <50 mg/kg soil pile for leachable lead.

## Key dates:

On 4 August 2015, United Retek was on site. ERRS treated soil stockpiles, labeled K, L, M and N, with cement and water. United Retek collected post-stabilization samples. MassDEP Representative Thompson was on site for a meeting regarding metal sampling.

On 5 August 2015, ERRS removed rebar from the concrete pieces and excavated Grid G 160-180 an additional 1-foot. A drainage pipe was discovered in Grid H 180-200 at the groundwater level.

## Week of 14 August 2015

OSC – EPA	Athanasios Hatzopoulos
START – Weston	Sara Evarts

Response Manager – GES	Frank Rodriguez
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)

Equipment on Site			
Type	Quantity		
Front End Loader	1		
Excavator	1		
Office Trailer	1		
Portable Toilet	2		
Utility Trailer	1		
Generator	1		
Water Cooler	1		

### Activities for the week included:

- Collecting post-excavation samples.
- Initiating backfilling activities.
- Conducting daily particulate air monitoring using three Dust Traks.

### Key dates:

On 10 August 2015, START collected PCB and metal post-excavation samples, designated by 'SS', as well as perimeter wall samples, designated by 'W2'. See Figure 4 and Table 2 for final PCB results. See Table 4 for post-excavation metal sample results.

On 11 August 2015, START collected PCB and metal samples. GeoTextile fabric was delivered and staged on site.

### Week of 21 August 2015

### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos	
START – Weston	Sara Evarts	
Response Manager – GES	Frank Rodriguez	
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)	

Equipment on Site			
Type	Quantity		
Front End Loader	1		
Excavator	1		
Office Trailer	1		
Portable Toilet	2		
Utility Trailer	1		
Generator	1		
Water Cooler	1		

### Activities for the week included:

- Loading out of PCBs <50 mg/kg soil from Soil Piles K through N.
- Collecting final post-excavation samples.
- Continuing backfilling activities.
- Removing scrap metal from site.
- Preparing samples for Field XRF, PCB, and Metals by Inductively Coupled Plasma (ICP) analysis at EPA NERL/OEME [25-27]. See Tables 1, 2, and 4 for results. Figure 4 includes final PCB screening data for all grids and their respective excavation depths.
- Conducting daily particulate air monitoring using three Dust Traks.

### Key dates:

During the week, 28 loads of approximately 32 tons each were removed from site and disposed of at Waste Management's Turnkey Landfill in Rochester, New Hampshire.

On 17 August 2015, ERRS placed power-washed scrap metal for removal from site into a dumpster delivered on 15 August by James G. Grant Industries.

On 19 August 2015, Brad Carpenter and Steve Cunningham of GES were on site for a meeting with GES personnel.

On 20 August 2015, scrap metal was picked up by James G. Grant Industries.

On 21 August 2015, START member Ray Tetrault was on site to assist in the demobilization of START equipment.

### Week of 28 August 2015

### Personnel on site:

OSC – EPA	Athanasios Hatzopoulos		
START – Weston	Paul Callahan		
Response Manager – GES	Frank Rodriguez		
ERRS – Operators/Laborers	Russ Chevalier, Operator (GES) Juan Perez, Laborer/Operator (GES) Francisco Bautista, Laborer (GES)		

Equipment on Site			
Type	Quantity		
Front End Loader	1		
Excavator	1		
Office Trailer	1		
Portable Toilet	2		
Utility Trailer	1		
Generator	1		
Water Cooler	1		

### Activities for the week included:

- Continuing backfilling activities.
- Demobilizing personnel and equipment from site.

### Key dates:

On 25 August 2015, the water cooler was demobilized from the site.

On 26 August 2015, the Conex box and generator were demobilized from the site.

On 27 August 2015, the trailer was demobilized from the site. Personnel completed site work for the removal action and demobilized from the site.

### Week of 4 September 2015

On 3 September 2015, the GES excavator was demobilized from site.

### 4.0 ESTIMATED COSTS OF THE REMOVAL ACTION

EPA resources committed under this Removal Action are summarized below:

Cost Category	Ceiling	Costs Incurred	Remainder			
Regional Removal Allowance Costs						
ERRS	\$1,630,000	\$1,315,000	\$315,000			
START Contractor	\$245,000	\$242,603	\$2,397			
Other Extramural Costs Not Funded from the Regional Allowance						
Extramural Contingency	\$124,000	\$0	\$124,000			
<b>Total Removal Project Costs</b>	\$1,999,000	\$1,557,603	\$441,397			

This accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

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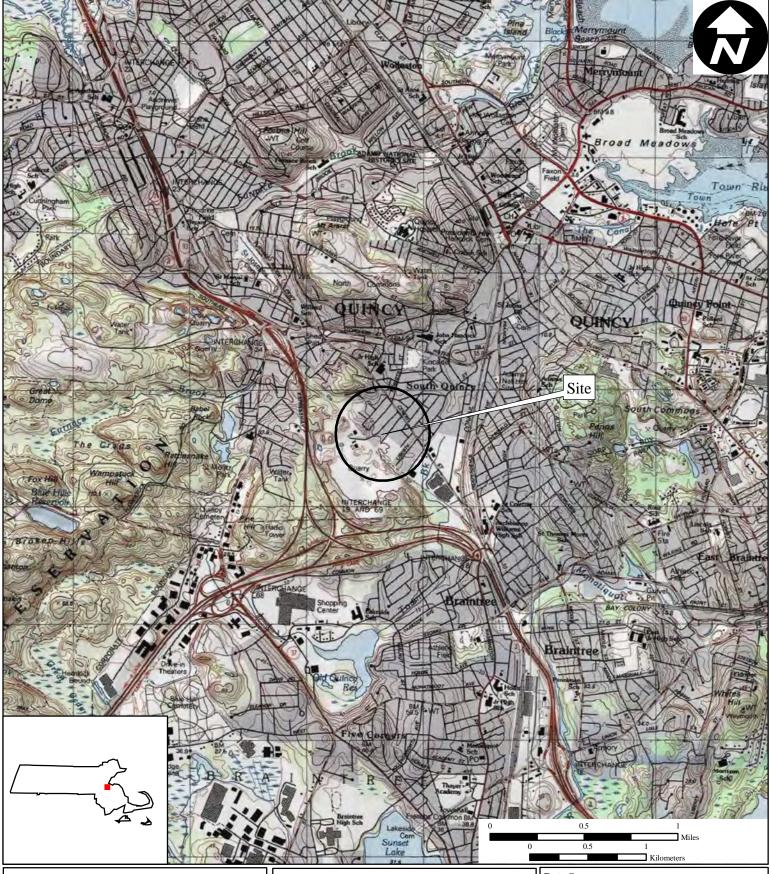
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## Appendix A

## Figures

- Figure 1 Site Location Map
- Figure 2 Site Diagram
- Figure 3 Grid Map
- Figure 4 New England Regional Laboratory Screening Data, Total Polychlorinated Biphenyls
- Figure 5 Soxhlet Confirmation Data, Total Polychlorinated Biphenyls



### Figure 1

### **Site Location Map**

**Intervale Street Site** 175/189 Intervale Street Quincy, Massachusetts

### EPA Region I **Superfund Technical Assessment and** Response Team (START) IV Contract No. EP-S3-15-01

TDD Number: TO1-01-15-07-0008

Created by: S. Evarts

Created on: 18 September 2014

Modified by: S. Evarts 6 October 2015 Modified on:

Data Sources: Topos: 2013 National Geographic Society, i-cubed Quadrangle Name(s): Blue Hills All other data: START



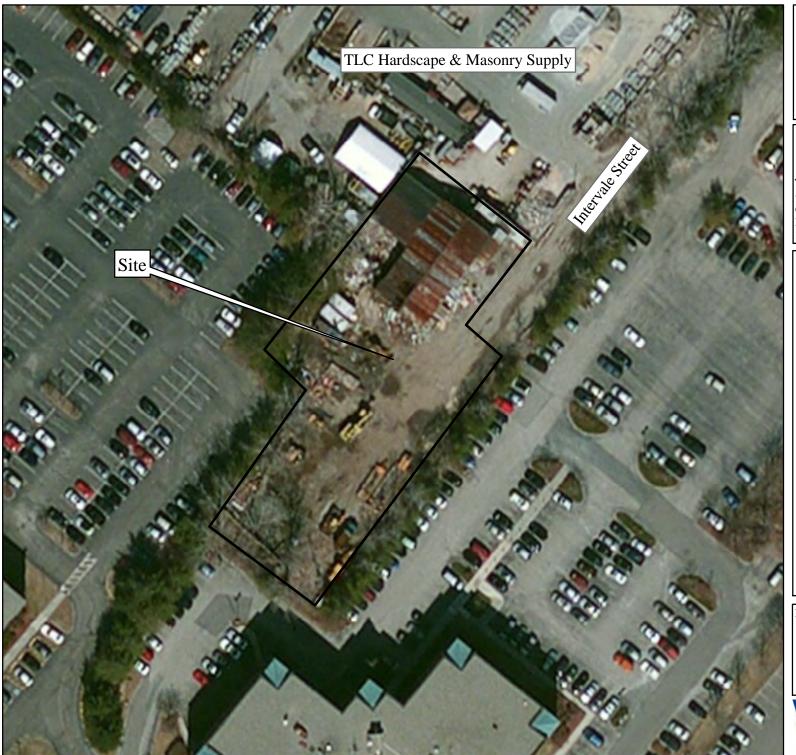


Figure 2

### Site Diagram

**Intervale Street Site** 175/189 Intervale Street **Quincy, Massachusetts** 

EPA Region I Superfund Technical Assessment and Response Team (START) IV Contract No. EP-S3-15-01 TO1-01-15-07-0008

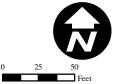
TDD Number: S. Evarts

Created by: Created on:

18 September 2014 Modified by: S. Evarts Modified on: 6 October 2015

### **LEGEND**

Approximate Fence Line



### Data Sources:

Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid,

IGN, IGP, swisstopo MicroPath Topos: All other data: START



E:\MA\_gis\Intervale Street Removal\MXD\Fig 2.mxd



Figure 3

### Grid Map

175/189 Intervale Street **Quincy, Massachusetts** 

EPA Region I Superfund Technical Assessment and Response Team (START) IV Contract No. EP-S3-15-01

TO1-01-15-07-0008 TDD Number: S. Evarts

Created by: Created on: 10 October 2014 S. Evarts Modified by:

### Legend

Modified on:

Approximate Fence Line

6 October 2015

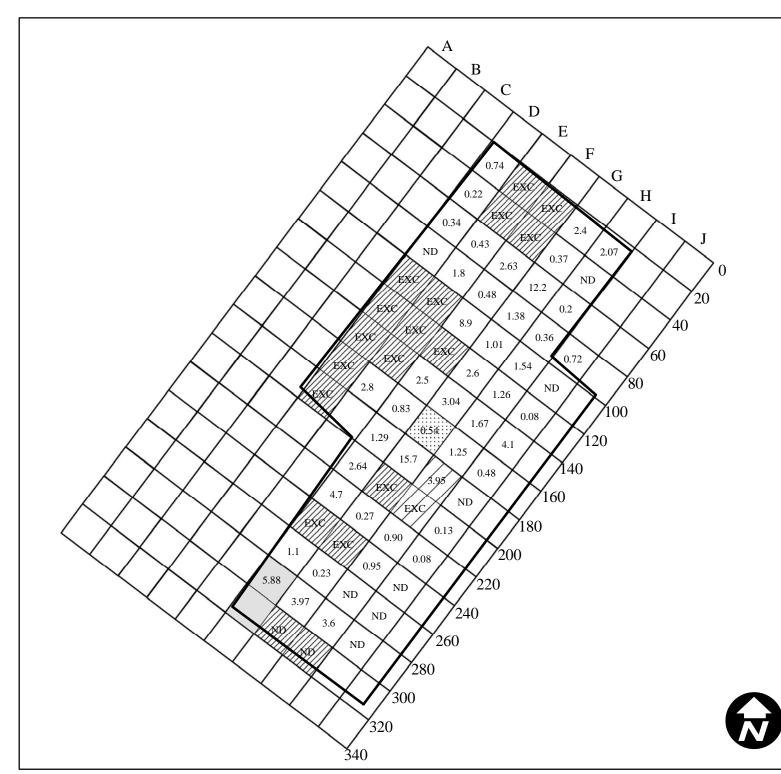
### Data Sources:

Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid,

IGN, IGP, swisstopo Topos: MicroPath All other data: START



E:\MA\_gis\Intervale Street Removal\MXD\Fig 3\_Grid Map.mxd



# Figure 4 New England Regional Laboratory Screening Data

**Total Polychlorinated Biphenyls** 

175/189 Intervale Street Quincy, Massachusetts

EPA Region I

Superfund Technical Assessment and Response Team (START) IV Contract No. EP-S3-15-01

**TDD Number:** TO1-01-15-07-0008 **Created by:** S. Evarts

Created on: 10 October 2014

Modified by: S. Evarts
Modified on: 6 October 2015

### Legend

Approximate Fence Line

### Excavation

Excavated 2-3 feet below grade

Excavated 3 feet below grade

Excavated 5-6 feet below grade

Excavated 1 foot below grade

Partial Excavation to 5-6 feet below grade
Values are milligrams per kilogram (mg/kg) of
Total PCBs.

ND = Non Detect

All sampling completed from within the fence line.

Excavations only include areas within the fence line.

Excavation depths are approximate depths from ground surface.

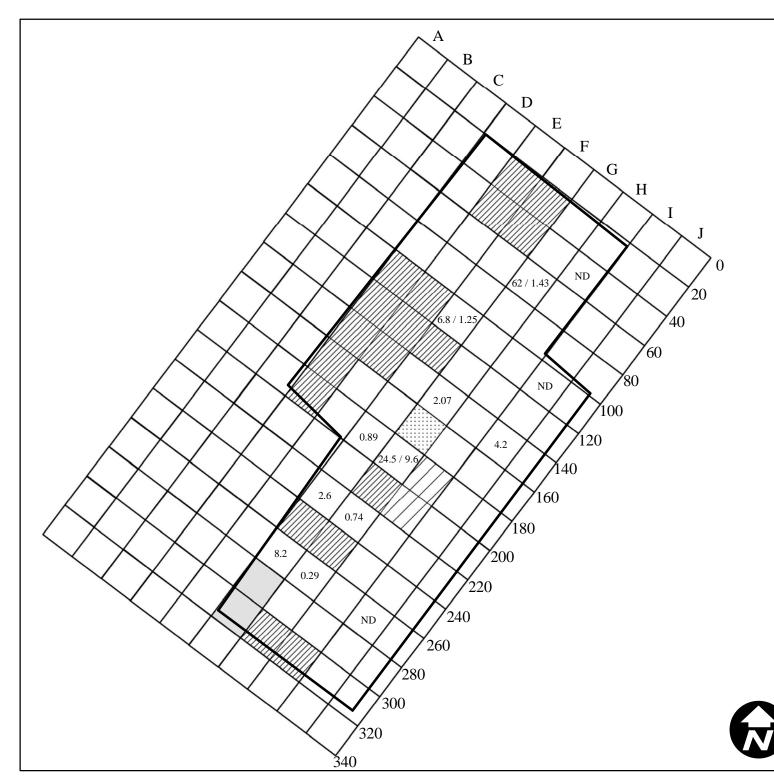
"EXC" indicates areas excavated to groundwater. Samples not collected at depth.

25 50 Feet

### Data Sources:

START





### Figure 5

## **Soxhlet Confirmation Data Total Polychlorinated Biphenyls**

175/189 Intervale Street Quincy, Massachusetts

EPA Region I Superfund Technical Assessment and Response Team (START) IV Contract No. EP-S3-15-01

**TDD Number:** TO1-01-15-07-0008 **Created by:** S. Evarts

Created on: 10 October 2014
Modified by: S. Evarts
Modified on: 6 October 2015

### Legend

Approximate Fence Line

### Excavation

Excavated 2-3 feet below grade

Excavated 3 feet below grade

Excavated 5-6 feet below grade

Excavated 1 foot below grade

Partial Excavation to 5-6 feet below grade

Values are milligrams per kilogram (mg/kg) of Total PCBs.

ND = Non Detect

All sampling completed from within the fence line.

Excavations only include areas within the fence line.

Excavation depths are approximate depths from ground surface.

"XX / XX" indicates two composite samples collected and submitted for Soxhlet analysis.

25 50 Feet

### Data Sources:

START



# Appendix B

Photodocumentation Log



SCENE: View of the southwest section of the property during the site reconnaissance (recon). Photograph taken facing

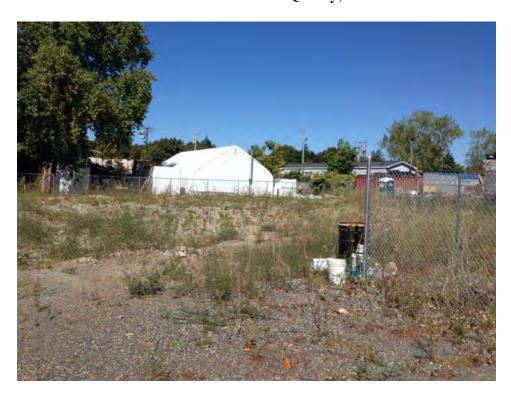
southwest.

**DATE:** 23 September 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 1154 hours **CAMERA:** iPhone 4S



SCENE: View of the southwest section of the property during the site recon. Photograph taken facing west.

**DATE:** 23 September 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 1154 hours **CAMERA:** iPhone 4S



SCENE: View of the north section of the property during the site recon. Photograph taken facing northwest.

**DATE:** 23 September 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 1154 hours **CAMERA:** iPhone 4S



**SCENE:** View of a five-point composite of Grid I 160-180. Photograph taken facing west.

**DATE:** 21 October 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 1300 hours **CAMERA:** iPhone 4S



SCENE: View of a concrete wall located on the southwestern property line. Photograph taken facing southwest.

**DATE:** 24 November 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 0756 hours **CAMERA:** iPhone 4S



SCENE: View of used drums and scrap metal uncovered during demolition of a concrete wall. Photograph taken facing

south.

**DATE:** 25 November 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 0842 hours **CAMERA:** iPhone 4S



SCENE: Post-demolition view of the concrete wall area. Photograph taken facing west.

**DATE:** 26 November 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 1119 hours **CAMERA:** iPhone 4S



SCENE: View of the 0-1 foot (ft) soil removal from Grids F 220-240 and F 240-260. Photograph taken facing southwest.

**DATE:** 2 December 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 1452 hours **CAMERA:** iPhone 4S



**SCENE:** View of soil piles covered in polyethylene (poly) tarpaulins (tarps). The far pile is less than (<) 50 parts per million (ppm) polychlorinated biphenyls (PCBs); near (larger) pile is greater than (>) 50 ppm. Photograph taken facing east.

DATE: 4 December 2015
PHOTOGRAPHER: S. Evarts
TIME: 1511 hours
CAMERA: iPhone 4S



SCENE: View of the removal of the 0- to 1-ft interval from CD-20 corner. Photograph taken facing south.

**DATE:** 15 December 2014 **PHOTOGRAPHER:** S. Evarts **TIME:** 1458 hours **CAMERA:** iPhone 4S



**SCENE:** View of wood material in an excavated sampling location.

**DATE:** 20 January 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1001 hours **CAMERA:** SCH-I545



SCENE: View of snow damage to the perimeter fence at the southwest end of site. Photograph taken facing southwest.

**DATE:** 7 April 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0818 hours **CAMERA:** iPhone 4S



**SCENE:** View of <50 ppm PCB load out. Photograph taken facing southwest.

**DATE:** 6 May 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0902 hours **CAMERA:** iPhone 4S



SCENE: View of three soil "volcanoes" created for mixing cement with lead-contaminated soil. Note that cement is being

added to the back pile (C). Photograph taken facing south.

**DATE:** 14 May 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0801 hours **CAMERA:** iPhone 4S



SCENE: View of the load out process and dust suppression. Photograph taken facing north.

**DATE:** 27 May 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0718 hours **CAMERA:** iPhone 4S



**SCENE:** View of I/J grid wall with asphalt layer. Photograph taken facing northeast.

**DATE:** 4 June 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1151 hours **CAMERA:** iPhone 4S



SCENE: View of the site during the 0-1-foot soil excavation. Note the stakes installed to delineate grids. Photograph taken

facing southwest. **DATE:** 9 June 2015

**DATE:** 9 June 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1447 hours **CAMERA:** iPhone 4s



SCENE: View of a truck scale unearthed in the H 20-60 grid. Photograph taken facing northwest.

**DATE:** 16 June 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1105 hours **CAMERA:** iPhone 4S



SCENE: View of the removal of the truck scale components from Grid H 20-60. Photograph taken facing northwest.

**DATE:** 17 June 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0833 hours **CAMERA:** iPhone 4S



SCENE: View of the truck scale bed in Grid H 20-60. Photograph taken facing northeast.

**DATE:** 17 June 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1004 hours **CAMERA:** iPhone 4S



SCENE: View of soil mixing/treatment with cement. Photograph taken facing east.

**DATE:** 25 June 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0800 hours **CAMERA:** iPhone 4S



**SCENE:** View of dust control activities during soil treatment. Photograph taken facing northeast.

**DATE:** 25 June 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0819 hours **CAMERA:** iPhone 4S



SCENE: View of a manhole discovered during excavation in the Grid FG 130 area.

**DATE:** 30 June 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1324 hours **CAMERA:** iPhone 4S



SCENE: View of groundwater at approximate D and E 100-190 excavation. Photograph taken facing southwest.

**DATE:** 10 July 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1304 hours **CAMERA:** iPhone 4S



**SCENE:** View of dust control activities during site activities. Photograph taken facing south.

**DATE:** 21 July 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0726 hours **CAMERA:** iPhone 4S



SCENE: View of groundwater at F and G 240-260 excavation. Photograph taken facing west.

**DATE:** 21 July 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1446 hours **CAMERA:** iPhone 4S



**SCENE:** View of a clay layer at Grid E and F 15-60 excavation. Photograph taken facing north.

**DATE:** 22 July 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0941 hours **CAMERA:** iPhone 4S



SCENE: View of concrete pieces placed in the bottom of approximate Grids D and 100-190 excavation. Photograph taken

facing west.

**DATE:** 23 July 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1453 hours **CAMERA:** iPhone 4S



SCENE: View of a concrete shelf and excavation at Grids G and H 300-310. Photograph taken facing west.

**DATE:** 24 July 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1242 hours **CAMERA:** iPhone 4S



SCENE: View of the excavation at Grids G and H 200-220 and Grid H 180-200, partially excavated. Note the visible drain

line. Photograph taken facing northeast.

**DATE:** 5 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0826 hours **CAMERA:** iPhone 4S



SCENE: View of the southern end of the site after backfill. Photograph taken facing south.

**DATE:** 10 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1324 hours **CAMERA:** iPhone 6



**SCENE:** View of Grid F 280-310 following tree removal activities. Photograph taken facing southwest.

**DATE:** 10 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1324 hours **CAMERA:** iPhone 6



**SCENE:** View of excavated Grids E and F 15-40. Photograph taken facing east.

**DATE:** 10 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1334 hours **CAMERA:** iPhone 6



SCENE: View of installed geotextile (GeoTex) layer over Grids H and I. Photograph taken facing southwest.

**DATE:** 12 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0732 hours **CAMERA:** iPhone 6



SCENE: View of the backfilling process. Photograph taken facing southwest.

**DATE:** 12 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0741 hours **CAMERA:** iPhone 6



**SCENE:** View of the backfilling process. Photograph taken facing southwest.

**DATE:** 12 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 0822 hours **CAMERA:** iPhone 6



SCENE: View of the backfilling process, in Grids F and G 200-220 and G 160-180. Photograph taken facing southwest.

**DATE:** 12 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1505 hours **CAMERA:** iPhone 6



**SCENE:** View of the backfilling process at the southern end of site. Photograph taken facing south.

**DATE:** 13 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1153 hours **CAMERA:** iPhone 6



**SCENE:** View of the backfilling process at the approximate Grids D and E 100-190 area. Photograph taken facing west.

**DATE:** 14 August 2015 **PHOTOGRAPHER:** S. Evarts **TIME:** 1440 hours **CAMERA:** iPhone 6



SCENE: View of the southern end of the site following the completion of backfilling activities. Photograph taken facing

southeast.

**DATE:** 25 August 2015 **PHOTOGRAPHER:** P. Callahan **TIME:** 1356 hours **CAMERA:** iPhone 4S



SCENE: View of the southern end of the site following the completion of backfilling activities. Rubber tires and wood

debris located in far corner. Photograph taken facing southwest.

DATE: 25 August 2015

PHOTOGRAPHER: P. Callahan

CAMERA: iPhone 4S



SCENE: View of the southern end of the site following the completion of backfilling activities. Photograph taken facing

southeast.

**DATE:** 25 August 2015 **PHOTOGRAPHER:** P. Callahan **TIME:** 1356 hours **CAMERA:** iPhone 4S

# PHOTODOCUMENTATION LOG Intervale Street Removal Site • Quincy, Massachusetts



SCENE: View of the southern end of the site following the completion of backfilling activities. Photograph taken facing

southeast.

**DATE:** 25 August 2015 **PHOTOGRAPHER:** P. Callahan **TIME:** 1357 hours **CAMERA:** iPhone 4S



SCENE: View of the northern end of the site following the completion of backfilling activities. Photograph taken facing

northeast.

**DATE:** 25 August 2015 **PHOTOGRAPHER:** P. Callahan **TIME:** 1358 hours **CAMERA:** iPhone 4S

# Appendix C

- Table 1 Field Screening X-Ray Fluorescence Metals Results
- Table 2 Final Polychlorinated Biphenyl Screening Results
- Table 3 Polychlorinated Biphenyl Confirmation Results
- Table 4 Metals Post-Excavation Results

FIELD SCREENING X-RAY FLUORESCENCE METALS RESULTS
SURFACE SOIL SAMPLES
INTERVALE STREET SITE, QUINCY, MASSACHUSETTS

Grid Name and Depth	Lead	Arsenic	Chromium	Barium	Cadmium	Comments
I 240-260 (1-2 ft)	57	ND	33	NA	NA	
I 260-280 (1-2 ft)	18	ND	35	NA	NA	
D 160-190 (1-2 ft)	2419	56	94	NA	NA	
E 160-190 (1-2 ft)	557	36	91	NA	NA	
I 220-240 (1-2 ft)	95	ND	37	NA	NA	
F 100-120 (1-2 ft)	192	ND	34	NA	NA	
E 80-100 (1-2 ft)	81	ND	40	NA	NA	
F 80-100 (1-2 ft)	67	ND	26	NA	NA	
E 100-120 (1-2 ft)	192	14	50	NA	NA	
I 280-310 (1-2 ft)	59	9.1	49	NA	NA	
D 100-120 (1-2 ft)	165	ND	48	NA	NA	
F 40-60 (1-2 ft)	74	ND	40	NA	NA	
G 280-310 (1-2 ft)	509	21	108	NA	NA	
H 280-310 (1-2 ft)	594	ND	69	NA	NA	
D 120-140 (1-2 ft)	146	ND	53	NA	NA	
D 120-140 (1-2 ft)	159	11	55	NA	NA	rerun in small sample bag
F 280-310 (1-2 ft)	1229	49	117	NA	NA	
F 280-310 (1-2 ft)	1270	35	113	NA	NA	rep
E 120-140 (1-2 ft)	93	10	44	NA	NA	
E 120-140 (1-2 ft)	126	7	40	NA	NA	dup
F 140-160 (1-2 ft)	275	ND	72	NA	NA	
H 220-240 (1-2 ft)	229	10	43	NA	NA	
E 140-160 (1-2 ft)	190	61	13	NA	NA	
D 140-160 (1-2 ft)	470	47	76	NA	NA	
F 120-140 (1-2 ft)	164	ND	52	NA	NA	
H 200-220 (1-2 ft)	718	47	121	NA	NA	
G 220-240 (1-2 ft)	157	ND	38	NA	NA	
D 80-60 (1-2 ft)	81	5.9	45	NA	NA	
D 60-80 (1-2 ft)	74	ND	53	NA	NA	
H 240-260 (1-2 ft)	197	11	48	NA	NA	
H 260-280 (1-2 ft)	73	9.6	52	NA	NA	`
G 260-280 (1-2 ft)	358	24	42	NA	NA NA	
F 260-280 (1-2 ft)	752	28	87	NA	NA NA	
F 200-220 (1-2 ft)	388	30	65	NA	NA NA	
F 240-260 (1-2 ft)	385	36	51	NA NA	NA NA	
			152	NA NA	NA NA	
F 220-240 (1-2 ft)	636	36				
G 240-260 (1-2 ft)	389 371	14 11	50 40	NA NA	NA NA	
G 240-260 (1-2 ft)	3/1	11	<del>4</del> 0	INA	INA	rep

FIELD SCREENING X-RAY FLUORESCENCE METALS RESULTS
SURFACE SOIL SAMPLES
INTERVALE STREET SITE, QUINCY, MASSACHUSETTS

Grid Name and Depth	Lead	Arsenic	Chromium	Barium	Cadmium	Comments
G 200-220 (1-2 ft)	236	11	53	NA	NA	
G 200-220 (1-2 ft)	290	10	51	NA	NA	dup
D 40-60 (1-2 ft)	58	5.2	52	NA	NA	
F 180-200 (1-2 ft)	186	ND	48	NA	NA	
F 180-200 (1-2 ft)	282	ND	56	NA	NA	dup
F 180-200 (1-2 ft)	220	ND	57	NA	NA	dup #2
G 40-60 (1-2 ft)	315	15	57	NA	NA	•
G 40-60 (1-2 ft)	319	12	58	NA	NA	rep
G 15-40 (1-2 ft)	230	ND	39	NA	NA	•
F 15-40 (1-2 ft)	86	ND	32	NA	NA	
E 60-80 (1-2 ft)	46	ND	41	NA	NA	
E 60-80 (1-2 ft)	65	ND	35	NA	NA	rerun in small sample bag
E 40-60 (1-2 ft)	149	7	54	NA	NA	·
E 40-60 (1-2 ft)	173	ND	51	NA	NA	rerun in small sample bag
D 15-40 (1-2 ft)	124	13	45	NA	NA	dried in oven
E 15-40 (1-2 ft)	141	11	38	NA	NA	dried in oven
D 40-60 (1-2 ft)	52	ND	43	NA	NA	dried in oven
H 180-200 (1-2 ft)	486	13	162	NA	NA	
H 160-180 (1-2 ft)	594	ND	48	NA	NA	
H 140-160 (1-2 ft)	363	ND	49	NA	NA	
I 200-220 (1-2 ft)	77	ND	39	NA	NA	
I 180-200 (1-2 ft)	103	ND	46	NA	NA	
I 180-200 (1-2 ft)	101	8	44	NA	NA	rep
I 160-180 (1-2 ft)	472	ND	47	NA	NA	•
l 140-160 (1-2 ft)	68	7.1	45	NA	NA	
l 120-140 (1-2 ft)	114	ND	50	NA	NA	
l 120-140 (1-2 ft)	113	8	48	NA	NA	dup
I 100-120 (1-2 ft)	211	9	47	NA	NA	•
G 180-200 (1-2 ft)	1458	48	949	NA	NA	
G 160-180 (1-2 ft)	714	27	58	NA	NA	
F 160-180 (1-2 ft)	699	31	81	NA	NA	
G 140-160 (1-2 ft)	339	20	60	NA	NA	
G 140-160 (1-2 ft)	350	16	55	NA	NA	rep
G 120-140 (1-2 ft)	637	17	102	NA	NA	'
G 120-140 (1-2 ft)	469	16	86	NA	NA	dup
G 100-120 (1-2 ft)	128	ND	53	NA	NA	'
H 100-120 (1-2 ft)	297	48	46	NA	NA	
H 120-140 (1-2 ft)	800	60	72	NA	NA	
H 15-40 TS	490	ND	106	NA	NA	

FIELD SCREENING X-RAY FLUORESCENCE METALS RESULTS
SURFACE SOIL SAMPLES
INTERVALE STREET SITE, QUINCY, MASSACHUSETTS

Grid Name and Depth	Lead	Arsenic	Chromium	Barium	Cadmium	Comments
F 60-80 (1-2 ft)	79	ND	22	NA	NA	
G 60-80 (1-2 ft)	192	ND	32	NA	NA	
H 60-80 (1-2 ft)	79	6.4	72	NA	NA	
H 80-100 (1-2 ft)	72	ND	35	NA	NA	
H 80-100 (1-2 ft)	71	ND	46	NA	NA	rep
G 80-100 (1-2 ft)	94	ND	38	NA	NA	
I 90-100 (1-2 ft)	140	ND	49	NA	NA	
I 90-100 (1-2 ft)	163	8	54	NA	NA	dup
H 40-60 (1-2 ft)	424	ND	36	NA	NA	·
H 15-40 (1-2 ft)	477	ND	97	NA	NA	
F 280-310 (2-3 ft)	650	ND	77	NA	NA	
H 60-90W (0-1 ft)	135	ND	63	NA	NA	
C 140-190W (0-1 ft)	1235	ND	307	NA	NA	
C 140-190W (0-1 ft)	1423	27	269	NA	NA	dup
H+I+J 90W (0-1 ft)	100	ND	48	NA	NA	·
F+G 15W (0-1 ft)	88	8	32	NA	NA	
E 220-260W (0-1 ft)	743	ND	282	NA	NA	
E 190-200W (0-1 ft)	1443	ND	343	NA	NA	
H 15W (0-1 ft)	32	ND	31	NA	NA	
C 60-100W (0-1 ft)	321	ND	63	NA	NA	
C 60-100W (0-1 ft)	327	ND	62	NA	NA	rep
E+F+G 310W (0-1 ft)	332	ND	82	NA	NA	
G 260-310W (0-1 ft)	1017	ND	78	NA	NA	
J 90-140W (0-1 ft)	591	ND	127	NA	NA	
H 15-60W (0-1 ft)	119	ND	51	NA	NA	
D+E+F 190W (0-1 ft)	1,139	ND	220	NA	NA	
J 220-260W (0-1 ft)	688	ND	62	NA	NA	
J 260-310W (0-1 ft)	341	ND	57	NA	NA	
H+I+J 310W (0-1 ft)	233	ND	79	NA	NA	
J 140-180W (0-1 ft)	936	ND	183	NA	NA	
J 180-220W (0-1 ft)	452	ND	109	NA	NA	
J 180-220W (0-1 ft)	465	ND	102	NA	NA	rep
J 180-220W (0-1 ft)	370	ND	100	NA	NA	dup
H 300-310SS *	53	ND	ND	360	ND	·
G 300-310SS *	12	ND	ND	470	ND	
F 280-310SS *	700	ND	ND	460	ND	
G 160-180SS *	240	ND	ND	360	ND	
G 160-180SSD *	760	26	ND	430	ND	Laboratory duplicate of G 160-180SS
I+J 310W2 *	81	ND	77	450	ND	

# FIELD SCREENING X-RAY FLUORESCENCE METALS RESULTS SURFACE SOIL SAMPLES INTERVALE STREET SITE, QUINCY, MASSACHUSETTS

Grid Name and Depth	Lead	Arsenic	Chromium	Barium	Cadmium	Comments
E+F 310W2 *	580	ND	54	300	ND	
E 260-310W2 *	860	ND	160	590	13	
C 15-60W2 *	72	ND	ND	530	ND	
C+D 15W2 *	130	ND	ND	650	ND	
G+H 310W2 *	740	ND	ND	290	ND	
E 220-260W2 *	840	35	590	530	13	
C+D+E 190W2 *	1800	79	250	640	ND	
C 140-190W2 *	1900	93	300	620	17	
C 100-140W2 *	780	ND	65	430	10	
E 15W2 *	640	ND	ND	630	ND	

#### NOTES:

- 1) Soil samples were analyzed by START with an X-Ray Fluorescence Spectrometry Analyzer (XRF) using Weston Solutions SOP No. WSI/S3-021 For Field Screening Metals in Soil Samples.
- 2) \* = Metal samples were analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, EIA-FLDXRFNITON4 Field Analysis of Metals by XRF.
- 3) All results in Milligrams per Kilogram (mg/Kg).
- 4) dup = Field duplicate.
- 5) rep = Field replicate.
- 6) NA = Not analyzed. Calibration not checked for barium or cadmium during XRF Field Screening.
- 7) ND = Not Detected.
- 8) Bolded lines indcate where standards run.
- 9) The Massachusetts Contingency Plan Soil category S-1 Standard (MCP S-1/GW-3) for Lead is 200 mg/kg, Arsenic is 20 mg/kg, Chromium (Total) is 100 mg/kg, Barium is 1,000 mg/kg, and Cadmium is 70 mg/kg.

	SAMPLE LOCATION:	F 260-280 (1-2 ft)	G 260-280 (1-2 ft)	H 260-280 (1-2 ft)	H 240-260 (1-2 ft)	G 240-260 (1-2 ft)	F 240-260 (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0097	R01-131006TH-0098	R01-131006TH-0099	R01-131006TH-0100	R01-131006TH-0101	R01-131006TH-0102
	SAMPLE DEPTH:	1-2 ft					
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	1.1	0.23	ND	0.48	0.16	<b>0.27</b> P
Aroclor-1260	NL	ND	ND	ND	0.47	ND	ND
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	1.1	0.23	ND	0.95	0.16	0.27

	SAMPLE LOCATION:	F 220-240 (1-2 ft)	G 220-240 (1-2 ft)	F 200-220 (1-2 ft)	F 180-200 (1-2 ft)	F 180-200D (1-2 ft)	G 200-220 (1-2 ft)				
	SAMPLE NUMBER:	R01-131006TH-0103	R01-131006TH-0104	R01-131006TH-0105	R01-131006TH-0106	R01-131006TH-0107	R01-131006TH-0108				
	SAMPLE DEPTH:	1-2 ft	1-2 ft								
	MCP S-1/GW-3										
COMPOUND	Standard										
POLYCHLORINATED BIPHENYLS	POLYCHLORINATED BIPHENYLS (PCBs) mg/Kg										
Aroclor-1242	NL	1.1	ND	ND	ND	ND	1.9				
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND				
Aroclor-1254	NL	2.1	0.27	1.8	0.49	0.62	<b>0.98</b> P				
Aroclor-1260	NL	1.5	ND	0.84	0.66	0.67	0.99				
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND				
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND				
TOTAL AROCLOR	1	4.7	0.27	2.64	1.15	1.29	3.87				

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- 2) MCF
- 3) Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	E 15-40 (1-2 ft)	F 15-40 (1-2 ft)	G 15-40 (1-2 ft)	G 40-60 (1-2 ft)	D 15-40 (1-2 ft)	D 40-60 (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0109	R01-131006TH-0110	R01-131006TH-0111	R01-131006TH-0112	R01-131006TH-0113	R01-131006TH-0114
	SAMPLE DEPTH:	1-2 ft					
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	ND	ND	ND	ND	ND	ND
Aroclor-1260	NL	1.2	2.2	2.4	0.37	0.74	0.22
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	1.2	2.2	2.4	0.37	0.74	0.22

	SAMPLE LOCATION:	E 40-60 (1-2 ft)	D 60-80 (1-2 ft)	E 60-80 (1-2 ft)	D 80-100 (1-2 ft)	F 40-60 (1-2 ft)	D 100-120 (1-2 ft)			
	SAMPLE NUMBER:	R01-131006TH-0115	R01-131006TH-0116	R01-131006TH-0117	R01-131006TH-0118	R01-131006TH-0119	R01-131006TH-0120			
	SAMPLE DEPTH:	1-2 ft								
	MCP S-1/GW-3									
COMPOUND	Standard									
POLYCHLORINATED BIPHENYLS (PCBs) mg/Kg										
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND			
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND			
Aroclor-1254	NL	ND	ND	ND	ND	ND	ND			
Aroclor-1260	NL	2.2	0.34	0.43	ND	0.20	0.49			
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND			
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND			
TOTAL AROCLOR	1	2.2	0.34	0.43	ND	0.20	0.49			

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- 2) MCF
- Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	D 120-140 (1-2 ft)	D 140-160 (1-2 ft)	E 120-140 (1-2 ft)	E 140-160 (1-2 ft)	F 120-140 (1-2 ft)	F 140-160 (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0121	R01-131006TH-0122	R01-131006TH-0123	R01-131006TH-0124	R01-131006TH-0125	R01-131006TH-0126
	SAMPLE DEPTH:	1-2 ft					
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS (	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	ND	ND	ND	ND	ND	ND
Aroclor-1260	NL	150	10	76	12	1,500	2.5
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	150	10	76	12	1,500	2.5

	SAMPLE LOCATION:	H 200-220 (1-2 ft)	H 220-240 (1-2 ft)	D 140-160D (1-2 ft)	H 200-220D (1-2 ft)	F 280-310 (1-2 ft)	G 280-310 (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0127	R01-131006TH-0128	R01-131006TH-0129	R01-131006TH-0130	R01-131006TH-0131	R01-131006TH-0132
	SAMPLE DEPTH:	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	4.0	1.2
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	ND	ND	ND	ND	5.5	1.9
Aroclor-1260	NL	0.73	0.90	11	3.9	2.2	0.87
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	0.73	0.90	11	3.9	11.7	3.97

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- 2) MCF
- Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	H 280-310 (1-2 ft)	H 280-310D (1-2 ft)	I 280-310 (1-2 ft)	I 260-280 (1-2 ft)	I 240-260 (1-2 ft)	I 220-240 (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0133	R01-131006TH-0134	R01-131006TH-0135	R01-131006TH-0136	R01-131006TH-0137	R01-131006TH-0138
	SAMPLE DEPTH:	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	1.6	1.5	ND	ND	ND	ND
Aroclor-1260	NL	2.0	1.9	ND	ND	ND	<b>0.08</b> L,P
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	3.6	3.4	ND	ND	ND	0.08

	SAMPLE LOCATION:	E 160-190 (1-2 ft)	D 160-190 (1-2 ft)	E 100-120 (1-2 ft)	F 100-120 (1-2 ft)	F 80-100 (1-2 ft)	F 80-100D (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0139	R01-131006TH-0140	R01-131006TH-0141	R01-131006TH-0142	R01-131006TH-0143	R01-131006TH-0144
	SAMPLE DEPTH:	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	<b>0.50</b> P	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	ND	ND	ND	ND	ND	ND
Aroclor-1260	NL	2.3	7.3	8.1	8.9 E	0.36	0.48
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	2.8	7.3	8.1	8.9	0.36	0.48

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram. 2) MCP
- 3) Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	E 80-100 (1-2 ft)	H 180-200 (1-2 ft)	H 160-180 (1-2 ft)	H 140-160 (1-2 ft)	I 200-220 (1-2 ft)	I 180-200 (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0145	R01-131006TH-0146	R01-131006TH-0147	R01-131006TH-0148	R01-131006TH-0149	R01-131006TH-0150
	SAMPLE DEPTH:	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	ND	3.0	0.76 P	1.1 P	ND	ND
Aroclor-1260	NL	1.8	<b>0.95</b> P	<b>0.49</b> P	0.57 P	0.13	ND
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	1.8	3.95	1.25	1.67	0.13	ND

	SAMPLE LOCATION:	I 160-180 (1-2 ft)	I 140-160 (1-2 ft)	I 120-140 (1-2 ft)	I 100-120 (1-2 ft)	G 180-200 (1-2 ft)	G 160-180 (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0151	R01-131006TH-0152	R01-131006TH-0153	R01-131006TH-0154	R01-131006TH-0155	R01-131006TH-0156
	SAMPLE DEPTH:	1-2 ft					
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS (PCBs) mg/Kg							
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	<b>0.26</b> P	4.1	ND	ND	8.7	<b>0.99</b> P
Aroclor-1260	NL	0.22	ND	0.084 P	ND	7.0	0.44
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	0.48	4.1	0.084	ND	15.7	1.43

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- 2) MCP
- 3) Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	F 160-180 (1-2 ft)	G 140-160 (1-2 ft)	G 120-140 (1-2 ft)	G 100-120 (1-2 ft)	H 100-120 (1-2 ft)	H 100-120D (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0157	R01-131006TH-0158	R01-131006TH-0159	R01-131006TH-0160	R01-131006TH-0161	R01-131006TH-0162
	SAMPLE DEPTH:	1-2 ft					
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	<b>0.30</b> P	2.4	1.4	0.41	0.61	0.56 P
Aroclor-1260	NL	0.53	<b>0.64</b> P	1.2	0.60	0.88	0.98
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	0.83	3.04	2.6	1.01	1.49	1.54

	SAMPLE LOCATION:	H 120-140 (1-2 ft)	H 15-40 TS	F 60-80 (1-2 ft)	G 60-80 (1-2 ft)	H 60-80 (1-2 ft)	H 80-100 (1-2 ft)
	SAMPLE NUMBER:	R01-131006TH-0163	R01-131006TH-0164	R01-131006TH-0165	R01-131006TH-0166	R01-131006TH-0167	R01-131006TH-0168
	SAMPLE DEPTH:	1-2 ft		1-2 ft	1-2 ft	1-2 ft	1-2 ft
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	0.70	2.9	0.93	3.0	<b>0.09</b> P	<b>0.14</b> P
Aroclor-1260	NL	0.56 P	2.4	1.7	9.2 E	0.11	0.16
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	1.26	5.3	2.63	12.2	0.20	0.30

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- 2) MCF
- 3) Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	G 80-100 (1-2 ft)	I 90-100 (1-2 ft)	H 40-60 (1-2 ft)	H 15-40 (1-2 ft)	H 80-100D (1-2 ft)	J 90-140W (0-1 ft)
	SAMPLE NUMBER:	R01-131006TH-0169	R01-131006TH-0170	R01-131006TH-0171	R01-131006TH-0172	R01-131006TH-0173	R01-131006TH-0174
	SAMPLE DEPTH:	1-2 ft	0-1 ft				
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	0.65	0.59	ND	1.2	<b>0.19</b> P	3.2
Aroclor-1260	NL	0.73	0.13	ND	0.87	0.17	2.1
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	1.38	0.72	ND	2.07	0.36	5.3

	SAMPLE LOCATION:	J 140-180W (0-1 ft)	J 180-220W (0-1 ft)	J 220-260W (0-1 ft)	J 260-310W (0-1 ft)	H+I+J 310W (0-1 ft)	E+F+G 310W (0-1 ft)
	SAMPLE NUMBER:	R01-131006TH-0175	R01-131006TH-0176	R01-131006TH-0177	R01-131006TH-0178	R01-131006TH-0179	R01-131006TH-0180
	SAMPLE DEPTH:	0-1 ft					
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS (PCBs) mg/Kg							
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	5.4	3.7	<b>2.0</b> P	<b>1.8</b> P	0.57	0.87
Aroclor-1260	NL	7.1	3.0	5.9	8.9	1.3	4.7 E
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	12.5	6.7	7.9	10.7	1.87	5.57

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- 2) MCF
- 3) Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	E 260-300W (0-1 ft)	E 220-260W (0-1 ft)	E 190-220W (0-1 ft)	D+E+F 190W (0-1 ft)	C 140-190W (0-1 ft)	C 60-100W (0-1 ft)
	SAMPLE NUMBER:	R01-131006TH-0181	R01-131006TH-0182	R01-131006TH-0183	R01-131006TH-0184	R01-131006TH-0185	R01-131006TH-0186
	SAMPLE DEPTH:	0-1 ft	0-1 ft				
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	1.1 P	21	7.2	5.6	4.8	0.27
Aroclor-1260	NL	0.83	ND	7.0	7.8	4.9	0.65
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	1.93	21	14.2	13.4	9.7	0.92

	SAMPLE LOCATION:	F+G 15W (0-1 ft)	H 15W (0-1 ft)	H 15-60W (0-1 ft)	H 60-90W (0-1 ft)	H+I+J 90W (0-1 ft)	F 280-310 (2-3 ft)
	SAMPLE NUMBER:	R01-131006TH-0187	R01-131006TH-0188	R01-131006TH-0189	R01-131006TH-0190	R01-131006TH-0191	R01-131006TH-0192
	SAMPLE DEPTH:	0-1 ft	2-3 ft				
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	<b>11</b> P
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	<b>0.09</b> P	ND	0.23	<b>0.24</b> P	0.36	ND
Aroclor-1260	NL	0.32	ND	0.27	0.33	0.32	ND
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	0.41	ND	0.50	0.57	0.68	11

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- 2) MCF
- 3) Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	F+G 15WD (0-1 ft)	H 300-310SS	G 300-310SS	F 280-310SS	G 160-180SS	G 160-180SSD
	SAMPLE NUMBER:	R01-131006TH-0193	R01-131006TH-0217	R01-131006TH-0218	R01-131006TH-0219	R01-131006TH-0220	R01-131006TH-0221
	SAMPLE DEPTH:	0-1 ft	6-7 ft	6-7 ft	3-4 ft	3-4 ft	3-4 ft
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	0.78	0.15	ND
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND
Aroclor-1254	NL	ND	ND	ND	2.7	0.24	0.27
Aroclor-1260	NL	0.12	ND	ND	2.4	<b>0.15</b> P	0.15
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND
TOTAL AROCLOR	1	0.12	ND	ND	5.88	0.54	0.42

	SAMPLE LOCATION:	I+J 310W2	E+F 310W2	E 260-310W2	C 15-60W2	C+D 15W2	G+H 310W2		
	SAMPLE NUMBER:	R01-131006TH-0222	R01-131006TH-0223	R01-131006TH-0224	R01-131006TH-0225	R01-131006TH-0226	R01-131006TH-0227		
	SAMPLE DEPTH:	0-1 ft							
	MCP S-1/GW-3								
COMPOUND	Standard								
POLYCHLORINATED BIPHENYLS (PCBs) mg/Kg									
Aroclor-1242	NL	ND	ND	ND	ND	ND	ND		
Aroclor-1248	NL	ND	ND	ND	ND	ND	ND		
Aroclor-1254	NL	<b>0.13</b> P	<b>0.59</b> P	1.1	ND	ND	1.8		
Aroclor-1260	NL	0.21	2.9	1.1	1.9	9.4	4.6		
Aroclor-1262	NL	ND	ND	ND	ND	ND	ND		
Aroclor-1268	NL	ND	ND	ND	ND	ND	ND		
TOTAL AROCLOR	1	0.34	3.49	2.2	1.9	9.4	6.4		

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- MCP
- 3) Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

	SAMPLE LOCATION:	E 220-260W2	C+D+E 190W2	C 140-190W2	C 100-140W2	E 15W2	
	SAMPLE NUMBER:	R01-131006TH-0228	R01-131006TH-0229	R01-131006TH-0230	R01-131006TH-0231	R01-131006TH-0232	
	SAMPLE DEPTH:	0-1 ft					
	MCP S-1/GW-3						
COMPOUND	Standard						
POLYCHLORINATED BIPHENYLS	(PCBs) mg/Kg						
Aroclor-1242	NL	ND	ND	ND	ND	ND	
Aroclor-1248	NL	ND	ND	ND	ND	ND	
Aroclor-1254	NL	2.6	6.1	8.5	2.0	ND	
Aroclor-1260	NL	1.7	7.0	7.9	3.8	31	
Aroclor-1262	NL	ND	ND	ND	ND	ND	
Aroclor-1268	NL	ND	ND	ND	ND	ND	
TOTAL AROCLOR	1	4.3	13.1	16.4	5.8	31	

	SAMPLE LOCATION:				
	SAMPLE NUMBER:				
	SAMPLE DEPTH:				
	MCP S-1/GW-3				
COMPOUND	Standard				
POLYCHLORINATED BIPHENYLS	POLYCHLORINATED BIPHENYLS (PCBs) mg/Kg				
Aroclor-1242	NL				
Aroclor-1248	NL				
Aroclor-1254	NL				
Aroclor-1260	NL				
Aroclor-1262	NL				
Aroclor-1268	NL				
TOTAL AROCLOR	1				

#### ANALYTICAL METHODS

Samples analyzed by U.S. EPA OEME as follows: PCBs: EPA Region I SOP EIASOP-PESTSOIL4, PCBs Medium Level in Soils and Sediments.

#### NOTES:

- 1) mg/kg = milligrams per kilogram.
- 2) MCP
- 3) Values bolded and shaded in red indicate compounds exceeding MCP S-1 Standards.
- 4) Results are reported in the units noted.
- 5) ND = Not Detected.

6) P = The confirmation value exceeded 35% difference and is less than 100%.

- 7) L = Estimated value is below the calibration range.
- 8) E = Estimated value exceeds the calibration range.
- 9) D = Duplicate.
- 10) NL = Not Listed.

# TABLE 3 POLYCHLORINATED BIPHENYL CONFIRMATION RESULTS INTERVALE STREET SITE, QUINCY, MASSACHUSETTS

		A40J9	A40K0	A40K1	A40K2	A40K3	A40K5
		G 60-80 (1-2 ft)	F 100-120 (1-2 ft)	G 180-200 (1-2 ft)	G 140-160 (1-2 ft)	I 140-160 (1-2 ft)	I 260-280 (1-2 ft)
		R01-131006TH-0166	R01-131006TH-0142	R01-131006TH-0155	R01-131006TH-0158	R01-131006TH-0152	R01-131006TH-0136
COMPOUND	MCP S-1/GW-3						
COMPOUND	Standard						
Aroclor-1248	NL	100 U	100 U	6,300 *	540	100 U	100 U
Aroclor-1254	NL	28,000 *	100 U	10,000 *	940	4,200 *	100 U
Aroclor-1260	NL	34,000 *	6,800 *	8,200 *	590	100 U	100 U
Total Aroclor	1000	62,000	6,800	24,500	2,070	4,200	100 U

		A40K6	A40K9	A40L0	A40L1	A40L2	A40L3
		H 40-60 (1-2 ft)	G260-280 (1-2 ft)	F 180-200 (1-2 ft)	F 260-280 (1-2 ft)	I 261-281 (1-2 ft)	F 220-240 (1-2 ft)
		R01-131006TH-0171	R01-131006TH-0098	R01-131006TH-0106	R01-131006TH-0097	R01-131006TH-0197	R01-131006TH-0103
COMPOUND	MCP S-1/GW-3						
COMPOUND	Standard						
Aroclor-1248	NL	100 U	100 U	100 U	100 U	100 U	730
Aroclor-1254	NL	100 U	190	540	3,900 *	100 U	1,100
Aroclor-1260	NL	100 U	100	350	840	100 U	730
Total Aroclor	1000	100 U	290	890	4,740	100 U	2,560

		A40L4	A40L5	A40L6	A40L7	A40L8	
		I 100-120 (1-2 ft)	G 220-240 (1-2 ft)	G 180-200S (1-2 ft)	F 100-120S (1-2 ft)	G 60-80S (1-2 ft)	
		R01-131006TH-0154	R01-131006TH-0104	R01-131006TH-0194	R01-131006TH-0195	R01-131006TH-0196	
COMPOUND	MCP S-1/GW-3						
COMPOUND	Standard						
Aroclor-1248	NL	100 U	180	2,200 *	100 U	100 U	
Aroclor-1254	NL	100 U	380	4,500 *	540	660	
Aroclor-1260	NL	100 U	180	2,900 *	710	770	
Total Aroclor	1000	100 U	740	9,600	1,250	1,430	

### NOTES:

- 1) Results are reported in micrograms per Kilogram (µg/Kg).
- 2) MCP S-1/GW-3 = MCP Method 1 Soil Category S-1 Standard for GW-3.
- 3) Values bolded indicate compounds exceeding MCP S-1 Standards.
- 4) U = Values not detected above the MDL are reported at the sample adjusted CRQL with a "U" flag.
- 5) All results are reported on a Dry Weight Basis.
- 6) \* = Reported value is from diluted analysis.

**TABLE 4** 

# **METALS POST-EXCAVATION RESULTS SURFACE SOIL SAMPLES INTERVALE STREET SITE QUINCY, MASSACHUSETTS**

	SAMPLE LOCATION	H 220-240SS	H 240-260SS	G 180-200SS	F 260-280SS	G 260-280SS
	SAMPLE NUMBER	R01131006TH-0199	R01131006TH-0200	R01131006TH-0201	R01131006TH-0202	R01131006TH-0203
	SAMPLE DEPTH	1-2 ft				
PARAMETER	MCP S-1/GW-3 Standard					
Silver	100	ND	ND	ND	ND	ND
Aluminum	NL	11,000	9,600	9,800	24,000	9,500
Arsenic	20	11	7.9	21	17	12
Barium	1,000	150	120	290	660	190
Beryllium	90	ND	ND	ND	ND	ND
Calcium	NL	21,000	6,800	17,000	3,200	16,000
Cadmium	70	4.0	3.1	17	18	5.3
Cobalt	NL	11	9.8	71	14	13
Chromium (Total)	100	150	160 J3	980	68	230
Copper	NL	1,200	530	22,000	1,300	860
Iron	NL	51,000	41,000	160,000	59,000	55,000
Magnesium	NL	3,900	2,900	3,000	3,400	3,500
Manganese	NL	800	640	2,000	780	850
Nickel	600	130	130	910	140	160
Lead	200	610	460	1,900	3400	860
Antimony	20	ND J1	ND	ND	14	7.4
Selenium	400	ND	ND	ND	ND	ND
Thallium	8	ND	ND	ND	ND	ND
Vanadium	400	60	39	93	43	58
Zinc	1,000	910	760 J3	6,700	3,700	1,100

## **ANALYTICAL METHODS:**

## NOTES:

- 1) All results in Milligrams per Kilogram (mg/Kg).
- 2) MCP S-1/GW-3 = MCP Method 1 Soil Category S-1 Standard for GW-3. Bolded results exceed standard. All standards in Milligrams per Kilogram (mg/Kg).
- 3) ND = Not Detected.
- 5) J1 = Estimated Value due to matrix spike recovery outside acceptance criteria.
- 6) J3 = Estimated Value due to relative percent difference result outside acceptance criteria.

**TABLE 4** 

# **METALS POST-EXCAVATION RESULTS SURFACE SOIL SAMPLES INTERVALE STREET SITE QUINCY, MASSACHUSETTS**

	SAMPLE LOCATION	G 280-300SS	G 280-300SSD	H 280-300SS	E 180-190SS	E 160-180SS
	SAMPLE NUMBER	R01131006TH-0204	R01131006TH-0205	R01131006TH-0206	R01131006TH-0207	R01131006TH-0208
	SAMPLE DEPTH	1-2 ft				
PARAMETER	MCP S-1/GW-3 Standard					
Silver	100	ND	ND	ND	ND	ND
Aluminum	NL	9,000	8,300	8,300	13,000	10,000
Arsenic	20	9.8	11	11	21	11
Barium	1,000	150	140	180	460	180
Beryllium	90	ND	ND	ND	ND	ND
Calcium	NL	6,500	6,400	8,000	6,200	7,300
Cadmium	70	3.9	3.7	4.5	25	7.8
Cobalt	NL	11	10	8.8	12	7.0
Chromium (Total)	100	230	170	130	79	35
Copper	NL	720	630	570	1,200	4,300
Iron	NL	40,000	41,000	43,000	76,000	40,000
Magnesium	NL	3,000	2,900	2,500	2,900	3,600
Manganese	NL	590	560	910	630	810
Nickel	600	160	140	110	130	42
Lead	200	520	490	1,300	2,600	420
Antimony	20	ND	ND	ND	16	ND
Selenium	400	ND	ND	ND	ND	ND
Thallium	8	ND	ND	ND	ND	ND
Vanadium	400	58	61	56	57	27
Zinc	1,000	910	830	940	2,800	850

### **ANALYTICAL METHODS:**

### NOTES:

- 1) All results in Milligrams per Kilogram (mg/Kg).
- 2) MCP S-1/GW-3 = MCP Method 1 Soil Category S-1 Standard for GW-3. Bolded results exceed standard. All standards in Milligrams per Kilogram (mg/Kg).
- 3) ND = Not Detected.
- 5) J1 = Estimated Value due to matrix spike recovery outside acceptance criteria.
- 6) J3 = Estimated Value due to relative percent difference result outside acceptance criteria.

**TABLE 4** 

# **METALS POST-EXCAVATION RESULTS SURFACE SOIL SAMPLES INTERVALE STREET SITE QUINCY, MASSACHUSETTS**

	SAMPLE LOCATION	G 120-140SS	G 100-120SS	D 80-100SS	D 40-60SS	D 15-40SS
	SAMPLE NUMBER	R01131006TH-0209	R01131006TH-0210	R01131006TH-0211	R01131006TH-0212	R01131006TH-0213
	SAMPLE DEPTH	1-2 ft				
PARAMETER	MCP S-1/GW-3 Standard					
Silver	100	ND	ND	ND	ND	ND
Aluminum	NL	8,800	6,000	6,900	1,600	2,900
Arsenic	20	12	9.7	12	8.9	10
Barium	1,000	230	130	56	31	85
Beryllium	90	ND	ND	ND	ND	ND
Calcium	NL	13,000	15,000	1,500	1,800	3,100
Cadmium	70	7.6	4.4	5.8	1.2	1.6
Cobalt	NL	10	5.4	6.7	ND	4.4
Chromium (Total)	100	150	66	18	4.7	9.5
Copper	NL	840	400	120	92	230
Iron	NL	51,000	26,000	16,000	8,100	21,000
Magnesium	NL	3,100	2,800	2,600	640	1,500
Manganese	NL	710	410	340	150	310
Nickel	600	140	53	20	4.6	13
Lead	200	770	380	170	130	160
Antimony	20	ND	3.7	ND	5.5	2.9
Selenium	400	ND	ND	ND	ND	ND
Thallium	8	ND	ND	ND	ND	ND
Vanadium	400	47	31	19	5.3	16
Zinc	1,000	1,200	720	680	240	500

## **ANALYTICAL METHODS:**

### NOTES:

- 1) All results in Milligrams per Kilogram (mg/Kg).
- 2) MCP S-1/GW-3 = MCP Method 1 Soil Category S-1 Standard for GW-3. Bolded results exceed standard. All standards in Milligrams per Kilogram (mg/Kg).
- 3) ND = Not Detected.
- 5) J1 = Estimated Value due to matrix spike recovery outside acceptance criteria.
- 6) J3 = Estimated Value due to relative percent difference result outside acceptance criteria.

# **METALS POST-EXCAVATION RESULTS SURFACE SOIL SAMPLES INTERVALE STREET SITE QUINCY, MASSACHUSETTS**

	SAMPLE LOCATION	F 60-80SS	G 15-40SS	G 40-60SS	
	SAMPLE NUMBER	R01131006TH-0214	R01131006TH-0215	R01131006TH-0216	
	SAMPLE DEPTH	1-2 ft	1-2 ft	1-2 ft	
PARAMETER	MCP S-1/GW-3 Standard				
Silver	100	2.0	2.1	ND	
Aluminum	NL	5,000	7,500	4,400	
Arsenic	20	11	8.6	7.0	
Barium	1,000	59	65	42	
Beryllium	90	ND	ND	ND	
Calcium	NL	6,700	3,300	3,500	
Cadmium	70	2.7	4.8	1.1	
Cobalt	NL	5.3	6.7	4.1	
Chromium (Total)	100	28	34	18	
Copper	NL	210	470	200	
Iron	NL	24,000	28,000	15,000	
Magnesium	NL	1,900	2,600	2,000	
Manganese	NL	320	390	280	
Nickel	600	27	31	17	
Lead	200	250	430	220	
Antimony	20	4.5	3.1	ND	
Selenium	400	ND	ND	ND	
Thallium	8	ND	ND	ND	
Vanadium	400	25	27	17	
Zinc	1,000	340	550	230	

### **ANALYTICAL METHODS:**

### NOTES:

- 1) All results in Milligrams per Kilogram (mg/Kg).
- 2) MCP S-1/GW-3 = MCP Method 1 Soil Category S-1 Standard for GW-3. Bolded results exceed standard. All standards in Milligrams per Kilogram (mg/Kg).
- 3) ND = Not Detected.
- 5) J1 = Estimated Value due to matrix spike recovery outside acceptance criteria.
- 6) J3 = Estimated Value due to relative percent difference result outside acceptance criteria.

# Appendix D

Waste Disposal Summary Table

Date	Proper Shipping Name	Manifest Number	Volum Quan			tainer e/No.	Transporter	Disposal Facility
4/13/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488235 JJK	37.22	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/13/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480110 JJK	37.50	Т	1	DT	Goulet Trucking; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/13/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488236 JJK	36.72	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/13/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480111 JJK	33.42	Т	1	DT	Goulet Trucking; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/13/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488237 JJK	37.62	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/13/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480108 JJK	36.48	Т	1	DT	Goulet Trucking; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/14/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488238 JJK	36.96	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099

No. = Number

MI = Michigan

NH = New Hampshire

DOT = Department of Transportation

RCRA = Resource Conservation and Recovery Act

T = Tons

RQ = Reportable Quantity

UN = United Nations

PG = Packing Group

ERG = Emergency Response Guide

Date	Proper Shipping Name	Manifest Number	Volum Quan	-		tainer e/No.	Transporter	Disposal Facility
4/14/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480107 JJK	35.81	Т	1	DT	Goulet Trucking; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/14/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488239 JJK	36.80	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/14/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480106 JJK	36.03	Т	1	DT	Goulet Trucking; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/14/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488240J JK	36.63	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/14/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480104 JJK	34.02	Т	1	DT	Goulet Trucking; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
4/15/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488241J JK	23.31	Т	1	DT	US Bulk Transport, Inc.	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
5/6/2015	Non DOT, Non RCRA Regulated Material (Soil)	050615001	28.09	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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5/6/2015	Non DOT, Non RCRA Regulated Material (Soil)	050615002	31.82	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/6/2015	Non DOT, Non RCRA Regulated Material (Soil)	050615003	31.92	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/6/2015	Non DOT, Non RCRA Regulated Material (Soil)	050615004	34.88	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/6/2015	Non DOT, Non RCRA Regulated Material (Soil)	050615005	31.15	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/7/2015	Non DOT, Non RCRA Regulated Material (Soil)	050715006	31.46	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/7/2015	Non DOT, Non RCRA Regulated Material (Soil)	050715007	33.74	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/7/2015	Non DOT, Non RCRA Regulated Material (Soil)	050715008	33.14	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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5/7/2015	Non DOT, Non RCRA Regulated Material (Soil)	050715009	28.85	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/7/2015	Non DOT, Non RCRA Regulated Material (Soil)	050715010	32.72	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/7/2015	Non DOT, Non RCRA Regulated Material (Soil)	050715011	31.77	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815012	33.96	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815013	24.50	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815014	30.03	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815015	33.72	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815016	29.51	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815017	34.57	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815018	31.99	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815019	33.35	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/8/2015	Non DOT, Non RCRA Regulated Material (Soil)	050815020	35.65	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/27/2015	Non DOT, Non RCRA Regulated Material (Soil)	052715021	27.85	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/27/2015	Non DOT, Non RCRA Regulated Material (Soil)	052715022	31.33	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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5/27/2015	Non DOT, Non RCRA Regulated Material (Soil)	052715023	31.45	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/27/2015	Non DOT, Non RCRA Regulated Material (Soil)	052715024	31.87	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/27/2015	Non DOT, Non RCRA Regulated Material (Soil)	052715025	29.42	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/27/2015	Non DOT, Non RCRA Regulated Material (Soil)	052715026	29.48	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/27/2015	Non DOT, Non RCRA Regulated Material (Soil)	052715027	33.21	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/27/2015	Non DOT, Non RCRA Regulated Material (Soil)	052715028	32.37	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/28/2015	Non DOT, Non RCRA Regulated Material (Soil)	052815029	31.89	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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5/28/2015	Non DOT, Non RCRA Regulated Material (Soil)	052815030	31.93	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/28/2015	Non DOT, Non RCRA Regulated Material (Soil)	052815031	31.36	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/28/2015	Non DOT, Non RCRA Regulated Material (Soil)	052815032	30.31	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/28/2015	Non DOT, Non RCRA Regulated Material (Soil)	052815033	28.47	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
5/28/2015	Non DOT, Non RCRA Regulated Material (Soil)	052815034	34.62	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
6/1/2015	Non DOT, Non RCRA Regulated Material (Soil)	060115035	31.87	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
6/1/2015	Non DOT, Non RCRA Regulated Material (Soil)	060115036	33.11	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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6/1/2015	Non DOT, Non RCRA Regulated Material (Soil)	060115037	31.53	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
6/1/2015	Non DOT, Non RCRA Regulated Material (Soil)	060115038	30.53	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
6/1/2015	Non DOT, Non RCRA Regulated Material (Soil)	060115039	31.19	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
6/2/2015	Non DOT, Non RCRA Regulated Material (Soil)	060215040	31.25	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
6/2/2015	Non DOT, Non RCRA Regulated Material (Soil)	060215041	31.78	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
6/2/2015	Non DOT, Non RCRA Regulated Material (Soil)	060215042	30.61	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
6/2/2015	Non DOT, Non RCRA Regulated Material (Soil)	060215043	31.43	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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7/15/2015	Non DOT, Non RCRA Regulated Material (Soil)	071515044	33.71	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/15/2015	Non DOT, Non RCRA Regulated Material (Soil)	071515045	29.63	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/15/2015	Non DOT, Non RCRA Regulated Material (Soil)	071515046	29.81	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/15/2015	Non DOT, Non RCRA Regulated Material (Soil)	071515047	28.38	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/15/2015	Non DOT, Non RCRA Regulated Material (Soil)	071515048	32.89	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/15/2015	Non DOT, Non RCRA Regulated Material (Soil)	071515049	37.10	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/15/2015	Non DOT, Non RCRA Regulated Material (Soil)	071515050	30.62	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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7/15/2015	Non DOT, Non RCRA Regulated Material (Soil)	071515051	28.19	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615052	31.18	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615053	31.46	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615054	26.93	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615055	33.71	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615056	33.88	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615057	31.79	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615058	31.18	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615059	34.48	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615060	30.09	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615061	30.59	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615062	32.95	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/16/2015	Non DOT, Non RCRA Regulated Material (Soil)	071615063	34.27	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715064	27.29	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715065	32.69	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715066	31.15	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715067	32.18	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715068	32.23	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715069	32.17	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715070	31.39	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715071	31.42	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715072	34.37	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	071715073	33.92	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/20/2015	Non DOT, Non RCRA Regulated Material (Soil)	072015074	31.82	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/20/2015	Non DOT, Non RCRA Regulated Material (Soil)	072015075	36.37	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488244 JJK	35.25	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488242 JJK	34.66	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488243J JK	34.92	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099

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7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488245J JK	36.10	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488246J JK	36.07	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488247J JK	32.79	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488248J JK	35.20	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488249J JK	35.94	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/27/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488250J JK	36.66	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488251J JK	32.04	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099

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7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488252J JK	34.71	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488253J JK	35.68	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480103J JK	36.12	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480102J JK	30.95	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480101J JK	36.34	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480100J JK	32.17	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014488254J JK	36.37	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099

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Date	Proper Shipping Name	Manifest Number	Volum Quan	-		tainer e/No.	Transporter	Disposal Facility
7/28/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480099J JK	34.99	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480098J JK	33.87	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480097J JK	34.82	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480096J JK	34.94	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480090J JK	36.75	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480091J JK	35.15	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480092J JK	35.61	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099

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Date	Proper Shipping Name	Manifest Number	Volum Quan	-		tainer e/No.	Transporter	Disposal Facility
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480095J JK	34.88	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480094J JK	35.66	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/29/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480093J JK	36.91	Т	1	DT	Goulet Trucking, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/31/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480087J JK	35.49	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/31/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480088J JK	35.49	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
7/31/2015	RQ, UN3432, Polychlorinated biphenyls, solid, mixture, 9, PGIII, ERG #171	014480089J JK	35.28	Т	1	DT	EQ Northeast, Inc.; Providence & Worcester Railroad	Wayne Disposal, Inc. Site #2 Landfill 49350 N I-94 Service Drive Belleville, MI 48099
8/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	081715083	32.83	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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8/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	081715082	28.07	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	081715081	32.88	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	081715080	33.92	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	081715079	33.88	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	081715078	34.53	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	081715077	33.44	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/17/2015	Non DOT, Non RCRA Regulated Material (Soil)	081715076	34.35	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815084	27.94	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815085	30.20	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815086	31.33	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815087	32.96	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815088	31.93	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815089	30.77	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815090	32.41	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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Date	Proper Shipping Name	Manifest Number	Volume or Quantity		Container Type/No.		Transporter	Disposal Facility
8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815091	32.13	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/18/2015	Non DOT, Non RCRA Regulated Material (Soil)	081815092	38.93	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915093	30.26	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915094	31.96	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915095	28.88	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915096	33.42	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915097	32.55	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915098	32.59	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915099	32.93	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915100	34.65	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915101	32.22	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/19/2015	Non DOT, Non RCRA Regulated Material (Soil)	081915102	28.92	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867
8/20/2015	Non DOT, Non RCRA Regulated Material (Soil)	082015103	32.44	Т	1	DT	Goulet Trucking	Waste Management of NH-Turnkey Landfill 30 Rochester Neck Road Rochester, NH 03867

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# Appendix E

# Analytical Data and Chains-of-Custody

(See Section 2.03 of the EPA Site File for the Intervale Street Site Removal Action)